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OODE,

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PATENTS FOR INVENTIONS.

ABRIDGMENTS

OF

Specifications

RELATING TO

UMBRELLAS, PARASOLS, AND WALKING STICKS.

A.D. 1780–1866.

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PREFACE.

The Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct inventions, and many of those filed under the new law of 1852 indicate various applications of the single invention to which the Patent is limited. Considering, therefore, the large number of inventions and applications of inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions will, from time to time, become apparent, and be supplied in second or supplemental editions.

This volume contains Abridgments of Specifications to the end of the year 1866. From that date the Abridgments have not been published in classes, but they are to be found in chronological order in the "Chronological and Descriptive Index" (*see* List of Works at the end of this book). It is intended, however, to publish these Abridgments in classes as soon as the Abridgments of all the Specifications from the earliest period to the end of 1866 have appeared in a classified form. Until that is done, the reader (by the aid of the Subject-matter Index for each year) can continue his examination of the Abridgments relating to the subject of his search in the Chronological and Descriptive Index.

This series, as the title implies, contains inventions relating to umbrellas, parasols, sunshades, walking sticks, and canes. The manufacture of fabrics specially intended for umbrella or parasol covers is included; also inventions for the preparation of whalebone, cane, horn, and similar materials to be used for umbrellas and parasols. Stands for umbrellas have been admitted. These are about all the inventions, beyond those obviously comprised in the title, which it has seemed needful to include.

The Abridgments marked thus (* *) in the following pages were prepared for another series or class, and have been transferred therefrom to this volume.

B. WOODCROFT.

August, 1871.

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INTRODUCTION.

In spite of the comparatively recent introduction of umbrellas into England, there cannot be any doubt as to their extreme antiquity. Their use can be traced back into very early times in the East, where they first seem to have originated. As a protection from the rain, indeed, the umbrella is a comparatively modern invention; it was as a shade against the scorching heats of the sun that they were first employed. Whether the "shade defending from the sun" of the Bible, can be interpreted to mean an umbrella is doubtful, but we are not without very early representations of it. In the Ninevite sculptures the umbrella or parasol (the two are practically the same) appears frequently. Layard has a picture of a bas-relief* representing a king in his chariot, with an attendant holding an umbrella over his head. It has a curtain hanging down behind, but is otherwise exactly like those in use at the present time, the stretchers and sliding runner being plainly represented.†

"The umbrella or parasol, that emblem of royalty so universally adopted by eastern nations, was generally carried over the king in time of peace, and sometimes even in war. In shape it resembled, very closely, those in common use; but it is always open in the sculptures. It was edged with tassels, and was usually ornamented at the top by a flower or some other ornament. On the later bas-reliefs, a long piece of embroidered linen or silk falling from one side like a curtain, appears to screen the king completely from the sun. The parasol was reserved exclusively for the monarch, and is never represented as borne over any other person."‡

---

* *Layard's Nineveh*, &c., vol. ii. p. 136 (edit. 1849).

† The Assyrian Empire lasted from 1200 to 606 B.C. No date is suggested by this particular sculpture by Layard.

‡ *Layard's Nineveh*, &c., vol. ii. p. 328 (edit. 1849).

In the same way the umbrella appears in Egyptian sculptures. Its use in Egypt, however, was not strictly confined to the king, but seems to have been permitted to nobles and people of importance. Wilkinson * gives a woodcut of an Ethiopian princess, seated in a plaustrum or car drawn by oxen, with an attendant holding a sort of umbrella over her. From this particular sculpture it is not easy to say whether it is a true umbrella or a screen shaped like a segment of a circle, but it is very probably a regular umbrella, represented in the conventional and somewhat rude style of most Egyptian bas-reliefs. Sometimes it is a sort of flabella or large fan, like those carried behind the Pope at present, that is held behind the king as a shade, and though a sunshade of this sort is common, it can hardly be considered quite established that any representation of a true expansible umbrella occurs in any of the Egyptian sculptures. In some at Persepolis of a very Egyptian character, the figure of a king† appears, attended by a slave who carries over his head an umbrella with stretchers and runner complete. In other sculptures on the rock at Takht-i-Bostan, supposed to be not less than twelve centuries old, a deer-hunt is represented, at which a king looks on, seated on a horse, and having an umbrella borne over his head by an attendant.

It seems doubtful whether, in the picture given by Wilkinson of a military chief in his chariot, the frame which an attendant holds up behind the rider is a shield or a screen, but the latter is the more probable supposition. In some paintings on a temple wall, Wilkinson states that an umbrella is held over the figure of a god carried in procession, and from his account we may, perhaps, consider it decided that the umbrella in its modern shape was used in Egypt.

Going farther east, in India and China, we find the umbrella in use from very remote times. Here, more especially, it seems to have been part of the insignia of royalty, and its use permitted only to the king or to great nobles. To trace the origin of this custom is of course quite out of the question, but perhaps it may be possible to account in some degree for its meaning by the following considerations.

There is one particular class of religious festivals in which the

---

* *Wilkinson's Ancient Egyptians,* vol. iii. p. 179.
† *Ibid.* vol. ii. p. 288.

carrying of shady boughs in procession formed an important part. Examples of these are found amongst most of the Aryan nations and some others. There are also some feasts, but not so many, in which the umbrella was carried in the same way, and if the use of the two symbols was not actually interchangeable, they certainly appear to have been of identical meaning, and to have typified shade, hence the shades below, and hence death. In the Adoniazusæ (*Theocr. Adon.*, l. 119) we hear how Adonis is laid to rest under the shade of the *Anethum* or dill-plant. Amongst the northern nations the legion of the death of Balder below the miseltoe is another version of the same original idea. These are both, in all probability, sun-myths, and refer to the death of the sun amongst the shadows of night, that first origin of so many varied and expanded legends. The best known of these "bough-feasts" is certainly the Feast of Tabernacles among the Jews. Curiously enough, a coin of Agrippa bears on the reverse an umbrella, and appears to refer to this feast. In the *Σκιροφόρια*, the feast of Athene *Σκιράς*, a white parasol was borne by the priestesses of the goddess from the Acropolis to the Phalerus, and though the meaning of the symbol is not now known, it has in all probability much the same signification as the shady boughs used in other rites. In the feasts of Dionysius (in that at Alea in Arcadia, where he was exposed under an umbrella, and elsewhere) the umbrella was used, and in an old bas-relief the same god is represented as descending *ad inferos* with a small umbrella in his hand. Similarly, in the fifth incarnation of Vishnû, the god went down to the infernal regions bearing an umbrella in his hand, and the two myths are evidently of one origin. Much, indeed, of the purer part of the Dionysiac worship came from India, though it got a good deal changed from the religion of the temperate Hindu mythology. In many bas-reliefs also Dionysius appears with an umbrella. On an Etruscan vase, described by Christie,[*] Bacchus presents a dove to a seated female, behind whom stands another female holding an umbrella over both their heads.

Another proof of the significance attached to the umbrella is, that in a pagoda in China it has been seen alternating with the figure of the *lingam*, the emblem of the reproductive power of nature, so that the conclusion is obvious that by the umbrella is represented the destructive element. If this is so, the umbrella borne by kings in the east would symbolise the power over their subjects of life and death.

---

[*] *Christie on the Athenian* Skirophoria.

But whatever the meaning of the emblem, the use of the umbrella by Eastern kings is of very great antiquity. It it alluded to in the ancient drama of S'âkuntala, the author of which, Kâlidâsa, is supposed to have lived about the middle of the 6th century of the Christian era.[*]

According to Dr. Morrison, umbrellas and parasols are referred to in books printed about A.D. 300,[†] but their use has been traced much further back than this. A book of Chinese ceremonies, called "Tcheou-Li or The Rites of Tcheou," [‡] directs that upon the imperial cars the *dais* should be placed. "The figure of this dais " contained in the Chinese edition of Tcheou-Li, and the parti- " cular description of it given in the explanatory commentary of " Lin-hi-ye, both identify it with an umbrella. The latter de- " scribes the dais to be composed of 28 arcs, which are equivalent " to the whalebone ribs of the modern instrument, and the staff " supporting the covering to consist of two parts, the upper being " a rod $\frac{3}{18}$ths of a Chinese foot in circumference, and the lower " a tube $\frac{6}{10}$ths in circumference, into which the upper half is " capable of sliding." [§]

In the second Tartar invasion of China the emperor's son was taken prisoner by the Tartar chief, and made to carry his umbrella when he went out hunting.

M. de la Lonbère, who was envoy extraordinary from the French King to the King of Siam in 1687 and 1688, wrote an account entitled a "New Historical Relation of the Kingdom of " Siam," which was translated in 1693 into English. He says that the use of the umbrella was granted to some only of the subjects. An umbrella with several circles, as if two or three umbrellas was fastened on the same stick, was permitted to the king alone, while the nobles carried a single umbrella with painted cloths hanging from it. The Talapoins (or Siamese monks) had umbrellas made of a palm leaf cut and folded, so that the stem formed a handle.

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[*] *Journal of the Bombay Branch of the Royal Asiatic Society*, *October* 1860.

[†] *Morrison's Chinese Dictionary*, vol. i. pt. 2, p. 694, No, 8802.

[‡] *Le Tchéou-li ou Les Rites de Tchéou. Traduit pour la première fois du Chinois par feu Edouard Biot.* Paris, 1851, vol. ii. pp. 475, 478, 488.

[§] Reports of the Juries of the Exhibition of 1851, p. 656.

The same writer describes the audience-chamber of the King of Siam. "Pour tout meuble il n'y a que trois para-sol, un devant "la fenêtre, a neuf ronds, & deux à sept ronds aux deux côtéz de "la fenêtre. Le para-sol est en ce Pais-la, ce que le Dais est en "celui-ci."*

Tavernier, in his Voyage to the East, says that on each side of the Mogul's throne are two umbrellas, and also describes the hall of the King of Ava as decorated with an umbrella. The Mahratta Princes, who reigned at Poonah and Sattara, had the title of Ch'hatra-pati, "Lord of the umbrella." Ch'hatra or cháta has been suggested as the derivation of *σατράπης* (*ἐξατράπης* in Theopompus), and it seems a probable derivation enough. The cháta of the Indian and Birmese princes is large and heavy, and requires a special attendant to carry it, who has a regular position in the royal household. In Ava it seems to have been part of the king's title, that he was "King of the white elephant, and lord of the twenty-"four umbrellas." Persons of rank in the Mahratta court, who were not permitted the right of carrying an umbrella, used a screen, a flat vertical disk called Aft' ab-gir, carried by an attendant. Even now the umbrella has not lost its emblematic meaning. In 1855 the King of Birma directed a letter to the Marquis of Dalhousie in which he styles himself "His great, glorious, and "most excellent Majesty, who reigns over the kingdoms of Thuna-"paranta, Tampadípa, and all the great umbrella-wearing chiefs "of the Eastern countries, &c." †

In the Exhibition of 1851 was a state umbrella sent by the Maharajah of Nagpoor. The cover was of silk, gorgeously embroidered, the handle hollow, and of thick silver plate. In Bengal it appears that no distinction is attached to the umbrella, since the poorer classes there use a chattah or small umbrella, made of leaves of the *Licerata peltata.* These are of conical form and have numerous ribs and stretchers. The higher class in Assam use a similar umbrella.

In China it was always, as it is now, a mark of high rank, though not exclusively so. We hear of 24 umbrellas being carried before the Emperor of China when he was going hunting. Here it is, what it appears to be in no other Eastern country, a defence against rain rather than sun, and it is not very much used, as while the richer people do not go out much while it is wet, the poorer classes wear a dress that protects them from the weather. In the rainy season, for instance, a Chinese boatman wears a coat of straw, and a hat of straw and bamboo. Such a dress of course renders an umbrella superfluous.* Nevertheless great numbers of umbrellas are exported from China to India, the Indian Archipelago, and even South America. In the 1851 Exhibition two only were shown. Of them the Report says,† "They "present nothing remarkable beyond the great number of ribs, "which amount to forty-two. The ribs are formed of wood; and "instead of being embraced by the fork of the stretcher, as in the "case of European umbrellas, they have a groove cut out in the "middle of their lengths, into which the stretcher is secured by a "stud of wood. The head of each rib fits into a notch formed in "the ring of wood, which is fastened on to the top of the stick, "there being a separate notch for each rib. The slider is of wood, "and has forty-two notches, namely, one for each stretcher, which "like the ribs, is formed of wood. The covering of the umbrellas "exhibited is of oiled paper coarsely painted."

---

* Vol. i. p. 381. (A.D. 1691.)

† *Yule's Narrative of the Mission to the Court of Ava*, p. 354.

Amongst the Arabs the umbrella was a mark of distinction, and it is said to have the same import even among some Negro nations of Western Africa, who probably learnt its use from the Arabs. Niebuhr, who travelled in Southern Arabia, describes a procession of the Iman of Sanah. In it the Iman and each of the princes of his numerous family, caused a *madalla*, or large umbrella, to be carried by his side; and it is a privilege which, in this country, is appropriated to princes of the blood, just as the Sultan of Constantinople permits none but his vizier to have his caique, or gondola, covered behind, to keep him from the heat of the sun. The same writer goes on to say that many independant chiefs of Yemen carried *madallas* as a mark of their independence. In Morocco, according to a passage quoted by a writer in the "Penny Magazine" from the Travels of Ali Bey, the emperor alone and his family are allowed to use it. "The retinue of the "sultan was composed of a troop of from fifteen to twenty men "on horseback. About a hundred steps behind them came the "Sultan, who was mounted on a mule with an officer bearing his "umbrella, who rode by his side also on a mule. The umbrella

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* *Penny Magazine*, Dec. 1835, vol. iv. p. 480.
† Report of the Juries, p. 649.

" is a distinguishing sign of the sovereign of Morocco. Nobody
" but himself, his sons nor his brothers dares to make use
" of it."

In Turkey the umbrella is common. A vestige of the reverence once attached to it remains in the custom of compelling everybody who passes the palace where the Sultan is residing, to lower his umbrella as a mark of respect.

In Greece the parasol (*σκίας, σκιάδειον,* or *σκιαδίσκη,* called by Eustathius *ἀνθήλιος* and *παρώπιον*, words properly applied to the blinkers of a horse) was an indispensable article to an Athenian lady.* It was generally carried by a female slave :—

> " *θεράπαινα δὲ αὐτῇ προσέστηκε σκιάδειον φέρουσα.*"
>
> *Pausanias*, lib. vii. cap. 22, § 6.

This passage occurs in the description of a tomb near Pharæ, a Greek city. On the tomb was the figure of a woman, attended as above described.

Aristophanes seems to mention it among the common articles of female use—

> " *ἡμῖν μὲν γὰρ σῶν ἔτι καὶ νῦν*
> *τἀντίον, ὁ κανὼν, οἱ καλαθίσκοι*
> *τὸ σκιάδειον.*"
>
> *Aristophanes, Thesmop.* 821.

It occurs frequently on vases, and is in shape like that now used. It could be put up and down.

> " *τὰ δ' ὦτα γ' ἂν σου, νὴ Δι', ἐξεπετάννυτο*
> *ὥσπερ σκιάδειον, καὶ πάλιν ξυνήγετο.*"
>
> *Arist., Eq.* 1347.

which the Scholiast explains,

> " *ἐκτείνεται δὲ καὶ συστέλλεται πρὸς τὸν κατεπείγοντα καιρὸν.*"

For a man to carry one was considered a mark of effeminacy, as appears from the following fragment of Anacreon :

> " *σκιαδίσκην ἐλεφαντίνην φορεῖ γυναιξὶν αὔτως.*"
>
> *Athenæus*, lib. xii. cap. 46, § 534.

And the same conclusion has been drawn from the scene in Aristophanes (*Aves*, 1507) where Prometheus hides himself under his umbrella from the eyes of Zeus, though the plot hardly justifies it.

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* *Becker's Charicles*, vol. ii. p. 73.

The religious use of the umbrella in Greece has been alluded to above, but there was also another festival in which they appeared, though without any mystical signification. In the Panathenaia, the daughters of the Metoeci, or foreign residents, carried parasols over the heads of Athenian women, as a mark of inferiority.

"τὰς παρθένους τῶν μετοίκων σκιαδηφορεῖν ἐν ταῖς πομπαῖς ἠνάγκαζον."
Œlian, V. H., vi. 1. Also see *Harpocrates*, s. v. σκαφηφόροι.

In later times, the θολία, *petasus*, or broad-brimmed hat, superseded the umbrella, and in all probability it is a hat, not an umbrella, that is intended in Theocritus xv., 39, where this word θολια occurs. Plutarch makes Aristides speak of Xerxes as sitting under a canopy or umbrella looking at the sea-fight—

"καθήμενος ὑπὸ σκιάδι χρυσῇ."
Plut., *Them.* c. 16 (p. 120.),

and of Cleopatra in like manner

"ὑπὸ σκιάδι χρυσοπαστῳ."
Plut., *Anton.* c. 26 (p. 927).

From Greece it is probable that the use of the parasol passed to Rome, where it seems to have been commonly used by women. Allusions to it are tolerably frequent in the poets. Virgil's "Munimen ad imbres"* probably has nothing to do with umbrellas, but more definite mention of them is not wanting. Ovid speaks of Hercules carrying the parasol of Omphale :—

"Aurea pellebant rapidos umbracula soles,
Quæ tamen Herculeæ sustinuere manus."
Ov. Fast. lib. ii. l. 311.

Martial speaks of a servant carying the parasol :—

"Umbellam luscæ, Lygde, feras Dominæ."
Mart. lib. xi. ep. 73.

Juvenal mentions an umbrella as a present :—

"En cui tu viridem umbellam, cui succina mittas."
Juv. ix. 50.

Ovid advises a lover to make himself agreeable by holding his mistress's parasol :—

"Ipsa tene distenta suis umbracula virgis."
Ov. Ars. Am. ii. 209.

This shows that the umbrella was of much the same construction as ours.

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* *Georgic* ii. l. 352.

A very common use for it was in the theatre, whenever, from wind or other cause, the *velarium* or huge awning stretched over the building (always open to the air) could not be put up:—

> "Accipe quæ nimios vincant umbracula soles,
> Sit licet et ventus te tua vela tegent."
>
> *Mart.* lib. xiv. ep. 28.

By *tua vela* is to be understood "your own umbrella." And elsewhere the same writer gives the advice:—

> "Ingrediare viam cœlo licet usque sereno
> Ad subitas nunquam scortea desit aquas."
>
> *Mart.* lib. xiv. ep. 130.

Tiraquillus (a writer of the fourteenth century) mentions the umbrella among the marks of senatorial dignity, but probably incorrectly. Caligula permitted senators to wear *pileos Thessalicos* in the theatre for shade. Hence the error.*

After the founding of Constantinople, the custom of great people carrying an umbrella seems to have arisen, but in Rome it seems only to have been used as a luxury, never as a mark of distinction. Pliny speaks of umbrellas made of palm leaves, but from other sources we may gather that the Romans—at all events in the days of the empire—lavished as much splendour on their umbrella as on all the articles of their dress. Ovid (as above quoted) speaks of an umbrella inwrought with gold, and Claudian in the same way has:—

> —"Neu defensura calorem
> Aurea submoveant rapidos umbracula soles."
>
> *Claud.* lib. viii., De. iv. cons. Honorii, l. 340.

From this we may conclude that the carrying an umbrella was in some sort a mark of effeminacy. In another place (lib. xviii: in Eutropium i. l. 464) carrying the umbrella is alluded to as one of the duties of a slave:—

> "Jam non umbracula tollunt
> Virginibus," etc.

Gorius says that the umbrella came to Rome from the Etruscans, and certainly it appears not infrequently on Etruscan vases, as also on later gems. One gem, figured by Pacudius, shows an umbrella with a bent handle, sloping backwards. Strabo describes a sort of screen or umbrella worn by Spanish women, but this is not like a modern umbrella.

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* *Paulus Paciaudus.* *De Umbellæ* Gestatione. Rome, 1758.

During the middle ages we get occasional references to umbrellas, showing that their use was continued, though not extensively, and still as sunshades alone.

When Alexander III. was returning to Rome from Venice, after peace had been made with Frederic I., the people of Ancona presented him and the emperor with an umbrella apiece. Upon this the Pope ordered a third to be given to the Doge of Venice, "qui nos ab æstu turbationis liberans in refrigerio pacis posuit: "quod bene umbella significat. In cujus rei memoriam Duces "Venetiarum volumus in suis solemnitatibus uti."—*Dandulus, Chronicon*, lx. p. 35.

In the Basilican churches of Rome is suspended a large umbrella, and the cardinal who took his title from the church had the privilege of having an umbrella carried over his head on solemn processions. Hence it is not altogether impossible that the cardinal's hat may be derived from this umbrella. It would only be the change, above referred to, from the *σκίας* to the *θολία*.

The origin of this custom of hanging an umbrella in the Basilican churches is plain enough. The judge sitting in the basilikon would have it as part of his insignia of office. On the judgment hall being turned into a church, the umbrella remained, and in fact occupied the place of the canopy over thrones and the like in our own country. Beatiano, an Italian herald, says that "a vermilion umbrella in a field argent symbolises dominion."*

A mediæval gem represents a bishop in sacrificial vestments riding on horseback, with a cross bearer attending him, and a servant behind carrying an umbrella. Wright in his "Womenkind "in Western Europe" does not mention the use of the umbrella, but we can hardly doubt that its use was continued in Southern countries by women and priests as a protection against the sun. Even in England they were not entirely unknown, for Wright, in his "Domestic manners of the English," gives a drawing from the Harleian MS., No. 603, which represents an Anglo-Saxon gentleman walking out attended by his servant, the servant carrying an umbrella with a handle that slopes backwards (as in the figure of Bacchus on a gem alluded to above) so as to bring the umbrella over the head of the person in front. It probably therefore could not be shut up, but otherwise it looks an ordinary umbrella, and the ribs are represented distinctly.

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* *Notes and Queries.* Third Series, vol. x. p. 58.

Allusions however to the umbrella are very scarce till the seventeenth century, and even then it is only as a foreign invention that they are spoken of. Thomas Coryat, in his “ Crudities” (1611), speaks of umbrellas as in use in Italy. After talking of fans, he goes on to say, “ And many of them doe carry other fine “ things of a far greater price, that will cost at the least a duckat, “ which they commonly call in the Italian tongue vmbrellaes, that “ is, things that minister shadow vnto them for shelter against “ the scorching heate of the sunne. These are made of leather, “ something answerable to the forme of a little cannopy, & hooped “ in the inside with divers little wooden hoopes that extend the “ vmbrella in a prety large compasse. They are vsed especially “ by horsemen, who carry them in their hands when they ride, “ fastening the end of the handle vpon one of their thighs, and “ they impart so large a shadow vnto them, that it keepeth the “ heate of the sunne from the vpper parts of their bodies.”*

Reference to the same custom, of riders in Italy using umbrellas, is made in Florio’s “ Worlde of Worldes ” (1598) where we find “ Ombrella, a fan, a canopie. also a testern or cloth of State “ for a prince. also a kind of round fan or shadowing that they “ vse to ride with in sommer in Italy, a little shade.”

In Cotgrave’s “ Dictionary of the French and English tongues,” the French Ombrelle is translated “ An vmbrello; a (fashion of) “ round, and broad fanne, wherewith the Indians (and from “ them our great ones) preserve themselves from the heat of “ a scorching sunne; and hence, any little shadow, fanne, or “ thing, wherewith women hide their faces frõ the sunne.”

A sentence in Montaigne goes to show that in his time the umbrella had not got much further north than Italy :—

“ Les ombrelles, de quoy, depuis les anciens Romains l’Italie “ se sert, chargent plus le bras qu’ils ne deschargent le teste.”†

In Fynes Moryson’s Itinerary (1617)‡ we find a similar allusion to the habit of carrying umbrellas in hot countries “ to auoide the beames of the sunne.” Their employment, says the author, is dangerous, “ because they gather the heate into a pyramidall “ point, and thence cast it down perpendicularly vpon the head, “ except they know how to carry them for auoyding that danger.”

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* *Crudities*, p. 112 (edit. 1611).
† *Œuvres*, lib. iii. cap. ix. p. 546 in Panthéon Littéraire.
‡ *Pt.* 3, vol. i. ch. 2, p. 21.

"Poesis Rediviva," by John Collop, M.D. (1656), mentions umbrellas. Drayton, writing about 1620, speaks of a pair of doves, which are to watch over the person addressed in his verses :—

> "And like umbrellas with their feathers
> Shield you in all sorts of weathers."

Beaumont and Fletcher have an allusion to the umbrella (1640) :—

> "Now you have got a shadow, an umbrella,
> To keep the scorching world's opinion
> From your fair credit."
>
> *Rule a Wife and have a Wife*, act iii. sc. 1.

Ben Jonson too once mentions it (date 1616) :—

> "And there she lay, flat spread as an umbrella."
>
> *The Devil is an Ass*, act. iv. sc. 1.

Such references as these merely show that the use of the umbrella or parasol was known, not that it was common. The fact that one is mentioned in the catalogue of the "Museum "Tradescantium, or collection of rarities, preserved at South "Lambeth by John Tradescant," 1656, seems to show that an umbrella was a curiosity, unless indeed these particular umbrella had anything strange or unusual about it. That they were occasionally used is shown by a picture on the title-page of Evelyn's Kalendarium Hortense (1664), where a black page is represented as carrying a closed umbrella or sunshade.

Dryden speaks as if a parasol were no usual luxury for a woman of rank :—

> "I can carry your umbrella, and fan your ladyship."

The lines in Gay's "Trivia, or the Art of Walking the Streets "of London" (1712), have often been quoted :—

> "Good housewives all the winter's rage despise
> Defended by the ridinghood's disguise :
> Or underneath th' umbrella's oily shed
> Safe through the wet on clinking pattens tread.
> Let Persian dames th' umbrellas rich display,
> To guard their beauties from the sunny ray,
> Or sweating slaves support the shady load
> When Eastern monarchs show their state abroad,
> Britain in winter only knows its aid
> To guard from chilly showers the walking maid."
>
> Trivia, B. 1.

This appears to have been practically the first allusion to the umbrella as a protection from rain, and it is backed up by another of Swift's in the "Tatler" for Oct. 17, 1710, No. 238.

"The tucked-up sempstress walks with hasty strides,
While streams run down her oiled umbrella's sides."

Kersey's Dictionary (1708) describes an umbrella as a "screen "commonly used by women to keep off rain."

In "Robinson Crusoe" (published 1719) Defoe makes his hero say that he had seen umbrellas used in the Brazils, and that he made himself one after their pattern.

About this time the custom obtained of keeping an umbrella in the halls of great houses, to be used in passing from the door to the carriage. At coffee-houses too the same was done. In the "Female Tatler" for Dec. 12, 1709, there is an advertisement:—

"The young gentleman borrowing the umbrella belonging to "Will's coffee-house, in Cornhill, is hereby advertised, that to "be dry from head to foot on the like occasion, he shall be "welcome to the maid's pattens."

In the "Memoir of Ambrose Barnes," published for the Surtees Society, under date 1718, appears an entry, "Umbrella for the "Church's use, 25s." A similar entry is also found in the churchwarden's accounts for the parochial chapelry of Burnley, Surrey, for A.D. 1760, "Paid for umbrella, 2*l.* 10*s.* 6*d.*" Both these were in all likelihood intended for use at funerals in the churchyard like that alluded to in Hone's Year-book (1826) which was kept for the same purpose in a country church. This last had "an awning of green oiled-canvass, such as common um-"brellas was made of forty years ago."

Bailey's Encyclopedia (1736) has "Umbrello, a sort of wooden "frame, covered with cloth, put over a window to keep out the "sun; also a skreen carried over the head to defend from sun or "rain." Also "Parasol, a little umbrella to keep off sun, rain, &c."

There is at Woburn Abbey a picture, painted about 1730, of the Duchess of Bedford with a black servant behind her, who holds an umbrella over her, and a sketch of the same period attached to a song called "The Generous Repulse," shows a lady seated on a flowery bank holding a parasol over her head.

The idea therefore that the Duchess of Rutland devised parasols in 1826 for the first time is obviously incorrect. Captain Cook, in one of his voyages, saw some of the natives of the South Pacific islands with umbrellas made of palm leaves.

We have thus seen that the use both of the umbrella and parasol was not unknown in England during the earlier half of the eighteenth century. That it was not very common, is evident from the fact that General (then Lieut.-Colonel) Wolfe, writing from Paris in 1752, speaks of the people there using umbrellas for the sun and rain, and wonders that a similar practice does not obtain in England.

Just about the same time they do seem to have come into general use, and that pretty rapidly. Jonas Hanway, the founder of the Magdalen Hospital, has the credit of being the first man who had the courage to carry one habitually in London. As Hanway died in 1786, and he is said to have carried an umbrella for 30 years, the date of its first use by him may be set down at about 1750. For some time umbrellas were objects of derision, especially from the hackney coachmen, who saw in their use an invasion on the vested rights of the fraternity. John Macdonald, a footman who wrote a memoir of himself, relates that in 1770, he used to be greeted with the shout "Frenchman, Frenchman; why "don't you call a coach?" whenever he went out with his "fine "silk umbrella, newly brought from Spain." Records of the umbrellas first appearance in other English towns have also been preserved. In Glasgow (according to the account in Cleland's "Statistical Account of Glasgow") "the late Mr. John Jamieson, "surgeon, returning from Paris, brought an umbrella with him, "which was the first seen in this city. The doctor, who was a "man of great humour, took pleasure in relating to me how he "was stared at with his umbrella." In Edinburgh Dr. Spens is said to have been the first to carry one. In Bristol a red Leghorn umbrella appeared about 1780, according to a writer in "Notes "and Queries."* The trade between Bristol and Leghorn may account for this.

Horace Walpole tells how Dr. Shebbeare † (who was prosecuted for seditious writings in 1758) "stood in the pillory, having a "footman holding an umbrella to keep off the rain." For permitting this, Beardman, the under-sheriff, was punished.

At the end of the century allusions to the umbrella are not infrequent. Cowper in his Task (1780) twice mentions it, but seems to mean a parasol.

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* *Notes and Queries*, Series I., vol. 2, p. 491.

† *Memoirs of the Reign of George II.*, vol. ii. p. 153.

In France parasols and umbrellas used to be amongst the articles made by the corporate body of Boursiers. M. Natalis Rondot quotes from the *Journal du Citoyen* of 1754 the price of parasols. It ranged from 7*s.* 3*d.* to 17*s.* 6*d.*, according to the construction, and to whether they were made to fold up or not. In Diderot and D'Alembert's Encyclopédie,* is figured an umbrella, which closely resembles in construction those made at the present time. The ribs bear about the same proportion as regards length, to the stick, but the stretchers are much shorter, being less than a quarter of the length of the ribs. They are double, each rib having a pair joined, one on each side of the rib, at the same point. The ribs are joined at the top by being strung on a ring, as in old English umbrellas, but the runner is made of precisely similar censtruction to the modern runner, and seems almost identical with that described in Caney's Specification (No. 5761, A.D. 1829). Ribs and stick are jointed, the latter in two places. There is no catch to hold the umbrella closed, but this upper catch is the ordinary bent wire one. The upper joint of the stick is made with a screw, the lower of a hinge with a slider, as in a modern parasol. This slider has a catch, resembling the ordinary runner catch. At the top is a ring for carrying or suspending the umbrella.

“ The folding parasol was constructed with jointed ribs so as to
“ fold back, and was likewise self-opening. The rod was a metallic
“ tube, and contained a spiral spring which acted upon and
“ pressed upwards an inner rod. To this inner rod were jointed
“ the stretchers, which in this construction were placed above the
“ ribs instead of below, as in the ordinary form, beside which
“ they were much shorter so as to admit of their being concealed
“ by the covering. By the elasticity of the spiral spring contained
“ in the hollow stem, the inner rod was pressed outwards and
“ lifted the stretchers, and by their means raised the ribs also, so
“ that in its ordinary or natural state the umbrella was always
“ open, and would continue so unless constrained to remain closed
“ by a catch. On releasing the catch it consequently sprang open.
“ In order that it might be easily closed, four cords were attached
“ to four of the ribs and passed to the handle; and a loop embracing
“ these cords passed down by the side of the handle, and

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* *Encyclopédie.* Recueil des Planches. Jour. 1, Art. Boursier. (Édit. 1763.)

“ enabled the possessor to close his umbrella without difficulty.
“ From the authority already quoted (M. Rondot) we learn that
“ whalebone was employed for the ribs and that their number
“ varied with their length: for example, when 24 inches long
“ the number employed was 8, when 25 inches, 9; and when 26,
“ 28 and 30 inches, 10 were used. Calico was employed to cover
“ umbrellas, and silk to cover parasols. The use of parasols was
“ common in Lyons at that period (1786), they were carried by
“ men as well as women, they ‘were rose rose-coloured, white,
“ ‘ and of other colours, and were so light as to be carried without
“ ‘ inconvenience.’ ”*

The Encyclopédie Méthodique gives some interesting particulars as to the manufacture of parasols and umbrellas at the end of the eighteenth century.† From it, it appears that the ribs were occasionally made of metal. “On etend cette couverture portative par le moyen de quelques brins de baleine, ou de fils de cuivre ou de fer, qui la soutiennent.”

The following statement of the comparative weights and sizes of umbrellas was prepared by M. Farge for the French Exposition of 1849:—

Umbrellas of	Length of ribs. inches.	Weight. lb.	oz.
1645	31½	3	8½
1740	29	1	13
1780	28¾	1	8½
1840	27½	0	13¼
1849	27	0	8¾

From 1808 to 1848, 80 patents were taken out in France for inventions, 3 of importation, and 41 for improvements in umbrellas.

According to the report of the Jurors in 1851, France then held the first place in the manufacture of umbrellas and parasols of the better class, though the cheaper and plainer descriptions were best made in England. Many ingenious contrivances have been invented by the French. Travelling or pocket umbrellas (which do not appear, however, to have at any time become very popular) form one of their inventions. A portable umbrella was patented in 1869 by Lehut, which shuts up into a case 16 centimètres (6¼ in.) long and 6 centimètres (2⅓ in.) deep.

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* Report of the 1851 Exhibition, p. 658.

† *Encyclopédie Méthodique.* Arts et Sciences, vol. vi. p. 599.

The folding umbrella is an old French invention. Mention, indeed, is made of a walking-stick umbrella, in the *Dictionnaire des Arts et Métiers*, vol. v. In it the stretchers, ribs, and covers are all contained within the handle, and spring out on a catch being released. At present, Lyons is the chief seat of the silk manufacture for umbrella-covers, Rouen of cottons for the same purpose.

The first English patent referring to the subject bears date 1780, and a few years afterwards (1787) we find an advertisement put out by Thomas Folgham, of Cheapside, stating that he has "a great " assortment of his much-approved pocket and portable umbrellas, " which for lightness, elegance, and strength, far exceed anything " of the kind ever imported or manufactured in this kingdom. " All kinds of common umbrellas prepared in a particular way, " that will never stick together."

The early umbrellas were made of oiled silk, or glazed cotton cloth, and were very cumbrous and inconvenient. To judge from a picture of Hanway, and from the other old pictures mentioned above, they were small, with a very long handle. They were not used for walking, and consequently instead of the ferrule had a ring at the top, by which they were hung up. The stretchers were of cane, and the ribs of cane or whalebone. Instead of the present top-notch and runner, both ribs and stretchers were simply strung on a ring of wire, and the inequality of the friction and the weakness of such an arrangement caused the umbrella to be always getting out of order. The ribs and stretchers were jointed together very roughly, by a pin passing through the rib, on which the forked end of the stretcher hinged. The first improvement in this respect was by Caney (patent No. 5761, A.D. 1829, see p. 8), who invented a top-notch and runner in which each rib or stretcher has a separate hinge. The top-notch was made of a notched wheel or disc, into each slot of which an axis fixed on the top of the stretchers worked. The runner was made on a similar principle. At the point of the rib where the stretcher joined it, Caney fixed a middle bit, consisting of a small fork, in which the end of the stretcher was hinged. This construction was much stronger, and the forked ends of the stretchers were thus prevented from wearing out the cover, as before. With modifications, more or less important, this construction is the same as that now in general use.

The oiled silk of the first umbrellas soon gave way to ginghams, first of various colours, then generally brown. The expense of lute string and silk prevented their being generally used. In 1851, Messrs. Sangster introduced a new fabric called alpaca, made from the wool of the Peruvian and Chilian sheep. This wears better than silk, being of coarser thread, and looks better than the old cotton or gingham, which it has almost entirely superseded. Since its first introduction to the present time (1871), the makers have sold nearly four millions. The cheapness of silk at present, in consequence of the French treaty, has somewhat lessened the demand for alpaca of late. In the following year Fox's "paragon" frames, which are of semi-elliptical shape (the ellipse being bisected by its shorter axis), were introduced. The great weight of the umbrella furniture had long been a stumbling-block to manufacturers. A Swiss watch-spring maker named Sanguinede had discovered a secret of tempering steel which gave it great strength, and he had made some very light umbrellas, but they were immensely dear. On his death the secret died with him,* and Fox set to work to discover a method which should combine strength and lightness. After many trials, in which he made his ribs and stretchers T-shaped, tubular, and of other forms, he was led by the construction of the Menai bridge, to adopt the trough-like shape in which the "paragon" ribs are made. This is decidedly the most important improvement that has been made in umbrella furniture since the employment of metal for ribs had been introduced by Holland in 1840, to supersede the whalebone or cane of the older umbrellas. The lightness of the frame naturally permits lighter material to be used for the cover. As far as regards the improvements in other parts of the umbrella they are consist merely in simplifying either their shape or the manner of their construction. The tips are now made in one piece with the rib, instead of being made of bone, japanned metal or other material, and then fastened on. The long six-inch runners has given way to the short ones two inches long, and the ferrules are also much shorter than formerly.

The sticks are now generally made of cane (of which rajah canes are the best) or root-ended sticks. Amongst woods used, are beech, elm, holly, oak, maple, sycamore, beam tree, cherry, cornelian, medlar, hazel, and pimento. The older sticks were like those used now for gig-umbrellas, straight with a knob at the end. Brass tubes were once used, and later on, tubes of japanned iron. These are now principally made for export, though a good many are still employed at home.* Handles are made of bullock, buffalo, ram, and rhinoceros horn, also of bone, ivory, and tortoiseshell, besides other less common materials. Glass has occasionally been used.

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* It is said that this man made a piano-forte string an octave higher than any other. Its tension, however, was so immense that it was difficult to make a piano strong enough to stand it.

To keep the umbrella closed the old-fashioned plan was a ring fastened by a string. A tape and cotton superseded this, and in its turn gave way to the elastic now in use. Sliding caps to fit over the ends of the ribs and hold the umbrella closed, have been invented, but until quite recently do not seem to have come much into use. Birmingham and Sheffield are the great seats of the furniture manufacture. London and Manchester have the greatest number of wholesale umbrella-makers, who now generally manufacture for dealers throughout the country.

The following description of the manufacture given in the Juries Report, 1851, appears of sufficient interest to make it worth while extracting it.

"The frame-maker requires a capital of from 3*l.* to 6*l.* in " order that he may erect a couple of very primitive-looking " lathes with a circular saw; a rose cutter for forming the tips " and several drills, all of which screw into the mandril of the " lathes; also a paring knife, a small vice, and three or four pairs " of pliers, and lastly, a weighing board. The circular saw, rose " cutter and paring knife, are comparatively modern improvements. " He must rent a room or shop and pay for fuel and candles. " He has likewise to provide all the iron wire and brass-plate out " of what he receives in wages, but the stick, ribs, stretchers, and " runners, are furnished to him. In order to work economically " he must employ two lads, but he usually finds it more to his " interest to employ four, to whom he pays 4*s.* a week.

1. *Preparing the stick.*—The stick, which is usually of stained " beech, is first sawn off to a length, one end is tapered with the " paring knife to prepare it for receiving the ferrule; two grooves " are cut in with the circular saw in the direction of the length " of the stick, in order to receive the two springs, one for sustaining the umbrella open, and the other for keeping it closed. The " springs are then made out of iron wire and fastened one in each

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* *Birmingham and the Midland Hardware District.* Edited by S. Timmins. London, 1866.

furniture, though it is also made in lathes and hand pressers, and the covers are now almost entirely sewn by the sewing machine. The above description is consequently only true for certain sorts of umbrellas, though the changes have been more in the way the results have been arrived at, than in the results themselves. In 1866, they were employed in Birmingham about 120 men, 214 women, 154 boys, and 258 girls upon the manufacture of umbrella furniture.*

About the other articles included in the present series, namely, walking-sticks, there is not much to be said. Their use has certainly been common in all ages and all countries, and allusions to them are frequent throughout ancient and modern literature. Besides appearing in Egyptian bas-reliefs, some have been found in tombs,† made of cherry and other woods, and tipped with a knob or having a crook a short way down the stick for the hand to rest upon. A staff was commonly carried by Greek and Roman philosophers. The Pilgrim's staff of the middle ages was generally hollow at the top, and was used to carry small articles in. The custom of sticks being carried by Friars is said to have given a name to Crutched Friars, The Anglo-Saxons used walking sticks. In the eleventh century French ladies used canes, as did English women in later times. Pictures of eminent men painted as early as the sixteenth century represent them not infrequently with handsome canes. In the 18th century they seem to have been as common as they are now. References to the "clouded cane" and other sorts occur very frequently in the Spectator, Tatler, and elsewhere. Simple as the process of manufacture is, it is not so simple as might be expected. The stick has first (if required) to be peeled. This is done by boiling, after which the bark separates readily. Next the crook is made and the stick straightened; this is done by putting the stick into moist and warm sand, and then bending it by means of a vice. Lastly, the stick is dyed or stained, and is ready for use. If artificial knobs or handles are required they are affixed after this last process.

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* *Birmingham and Midland Hardware District*, p. 668.

† *Wilkinson's Ancient Egyptians*, vol. iii. p. 386.

UMBRELLAS, PARASOLS, AND WALKING STICKS.

UMBRELLAS, PARASOLS, AND WALKING STICKS.

A.D. 1786, October 6.—N° 1560.

BEALE, John.—"An umbrella with joints, flat springs, and " stops, worm springs and bolts, slip bolts, screws, slip rivet, and " cross stop and square slips, and the manner in which the same " are performed is particularly described in the several plates, " figures or drawings" annexed. The drawings referred to are not easily intelligible, from the briefness of the explanation attached, but show an umbrella with a jointed handle, opening by a spring.

[Printed, 10*d*. Drawing.]

A.D. 1786, November 9.—N° 1570.

GATWARD, Joseph.—"New-invented drawing tube spring " lock pillars for umbrellas, which may be vended with or " without umbrellas affixed to them." The wires are fixed to the runner which extends the umbrella part open, and are screwed to the tube; the spring lock fastens in a perforation in the pillar, to keep the umbrella open; by pressing a tail beneath it, it raises a catch out of the notch, which by pushing the tube causes the umbrella part to fall and shut, and thus removes "the incon" venience of forcing up the hand" to raise it as in common umbrellas.

[Printed, 8*d*. Drawing.]

A.D. 1802, January 2.—N° 2569.

LEA, Abner Cowell.—Machinery for manufacturing umbrella and parasol furniture.

Iron or steel is substituted for brass in the construction of umbrellas, and machinery for working it is described; a view of an iron stretcher, made according to this invention, is given. "The stretcher is pickled on the scale, eaten off by spirits of salts "diluted in water, or by being put into grains or wheaten bran, "after which the same is japanned or lacquered of a brass colour," "or plated with brass or any other metal." The furniture may be made of iron or steel prepared by the new process; the notched part of the runner may be formed of metal and is soldered on the tube; the notches to admit the stretchers are filed out or pierced out under a press and then japanned or lacquered; the top notch or top piece may be made of wrought iron or steel pierced or stamped, the top tips may be made of sheet iron drilled in a lathe. The caps and rings are made of cast iron stamped out of sheet iron or iron tinned, or raised by collars or punches out of sheet iron lacquered.

[Printed, 8*d*. Drawing.]

A.D. 1802, December 21.—N° 2668.

BARNETT, JOHN, and BARNETT, JOSEPH.—"An improved "mode of making parasols and umbrellas, and whereby the same "may be used for fans and other purposes," and called "Barnett's "patent paratout."

In the common umbrella all the ribs must be distended or relaxed together; in the "paratout" some of the ribs may be relaxed while the rest are kept distended, and it may be made to assume a number of useful and fanciful forms. The respective stretchers that are intended to act together are attached to ferules moveable up and down in grooves on the stem or stick, which have catches to retain the ferules, instead of all the stretchers being attached to one ferule as in the common umbrella; thus any rib or ribs may be made to act separately from the rest.

Drawings are given describing several forms of the instrument, 1, to act as a fan, the stick being made hollow and in two pieces to go into one another like a telescope, or to unscrew or fold up. 2. Another kind has only one instead of two sliding catch springs to distend the fan ribs, and the springs are relieved by a "thumb bolt." 3. The "paratout" is distended by drawing down instead of pushing them up. 4. Two sliding ferules with a pair of stretchers affixed to each of them when drawn by the thumb and finger distend the whole; the short joints fold up and retire within the groove, and by pressing the thumb-piece "the fan ends "or remaining parts also fall down." Two other varieties are described.

[Printed, 6d. Drawing.]

A.D. 1808, October 8.—N° 3171.

THOMASON, Edward.—"An improved mode of making "umbrellas and parasols."

The "umbrageous part, the stretchers, and other parts of the "mechanism" are concealed in the walking stick, cane, or tube of the "rhabdoskidophoros or walking cane umbrella," by pulling in or pushing out part of the walking cane or tube, Thus the "umbrageous parts," the stretchers, and other machinery are forced out of the walking stick or tube, whereby they may be expanded at pleasure into a convenient form, the cane or walking stick being preserved as the handle part of the umbrella or parasol.

[Printed, 6d. Drawing.]

A.D. 1808, December 29.—N° 3189.

McGREGOR, Malcolm, and McFARLAND, William.— "Improvements in the construction of umbrellas and parasols."

The umbrella may be "shut up in its case, to be used as a "walking stick," and may be used as a defensive weapon, by having a spear attached which is prevented from running into the stick when used by a spring, and may also be folded up and carried in the pocket. The "umbrageous part" is extended by pulling the runner down; it contains ten or more stretchers and ribs; to let it down on the stick it is pushed upward; the covering may be made without a seam in the quarters. Similar parasols are put on sticks of different descriptions.

[Printed, 6d. Drawing.]

A.D. 1809, March 1.—N° 3209.

DIDOT, Leger.—"Improvements in the construction of "umbrellas and parasols."

In the improved umbrella or parasol the water which falls on its surface is not allowed to fall or drop from its edges or circumference on the garments of the person using it, as in other umbrellas. A "gutter or receptacle" is made "around and "beneath" the circumference by means of "an additional edge "or rim," less depressed than the part within, into which the rain descends, and is collected at any convenient part through a lip or gutter and conducted off either into a reservoir made at any convenient part of the stick, or from a lip at the circumference. Various modifications of this arrangement are exemplified in the drawings.

[Printed, 6*d*. Drawing.]

A.D. 1809, April 19.—N° 3228.

THOMASON, Phillis Bown.—"Improved mode of making "umbrellas and parasols."

"A part of the walking stick or cane, the umbrageous part, the "stretchers and other parts of the mechanism" are hid or concealed by three, four, or a greater or less number of tubes that slide conveniently upon each other, and when drawn upon each other cover these parts and assume the appearance of a walking cane. This umbrella is named by the patentee the "ad libitum "umbrella or parasol."

Several views of the stretchers and ribs in combination are given.

[Printed, 6*d*. Drawing.]

A.D. 1811, March 14.—N° 3414.

DAVIS, Robert.—"A composition for and certain improvements "in the manufacturing all kinds of umbrella and parasol "furniture."

"The runners, ferules, spring top ferules, parasol runners, "sliding pipes, ferules and tubes for spring top ferules, tubes and "balls, and tubes for ivory hooks, shell tops, parasol and umbrella "tips," &c., are made in the same way as common umbrella tips, "but out of rolled gilding metal instead of dipping metal." When heated just red hot they are quenched by throwing them into spirits of salt pickle and are then "swilled well with water" and burnished. This process gives them a "red orange gold colour;" the cast work put on them is of gilding metal, the stretchers are of gilding metal, and instead of having forks, are cut down about the eighth of an inch. Various other methods of preparing the metal, colour, and ornaments of the improved articles are mentioned.

[Printed, 4d. No Drawings.]

A.D. 1812, December 4.—N° 3619.

PRICE, Charles.—" A parasol and an umbrella on an improved " construction."

The ribs and silk, and other parts of the mechanism, are caused " (by means of levers in conjunction with a wire passing through " each rib, connected with a notched keeper sliding on the stick " under the bell plate) to be drawn up on extending the parasol or " umbrella and there to remain stationary." This parasol and umbrella in its improved state the inventor wishes to be called " the imperial solumbrâ." The remainder of the specification is composed of a catalogue with figures of the separated parts of the " solumbrâ."

The parts may be made of zinc, gold, silver, brass, or any kind of metal, or wood, ivory, horn, tortoiseshell, paper, parchment, " or of any substance whatever."

[Printed, 6d. Drawing.]

A.D. 1813, March 16.—N° 3668.

DODD, George.—" Improvements to umbrellas, which renders the same more portable and convenient."

The improvement consists in forming the umbrella part so that it may be quickly taken off the stick, folded together, and carried in the pocket, while the stick may be made to form a walking stick or sword cane by being formed of metallic or other tubes sliding within each other. When extended it is retained in that position by spring stops or joints. Various methods are described of forming and securing the exterior covering, and of uniting the stretchers and ribs, and these with the umbrella in the proper manner; cross barred levers are sometimes used, and springs fixed to the under side of the stretcher, to "play" against the ribs and assist in expanding or folding up the umbrella.

[Printed, 8d. Drawing.]

A.D. 1814, August 17.—N° 3837. (* *)

KLEFT, Henry William Vander.—" Method of construct-" ing a walking staff to contain a pistol, powder, ball, and screw

" telescope, pen, ink, paper, pencil, knife, and drawing utensils." The staff is made of brass and may be covered with any suitable substance. "The shape is round and rather conical, tapering " from the head to the point. It is divided into nine parts, prin- " cipally tubes (exclusive of the cap or head, and the top or lid " of the inkstand), which are all screwed together, except that " part containing the pistol, which is fastened by means of two " spring catches fixed opposite to each other."

The first division is an inkstand, on which the cap of the staff screws.

The second part serves for the handle of the pistol, and also contains a penknife, pen, and black-lead pencil.

The third part receives the pistol, which can be immediately disengaged from the case and from the lower part of the staff, on pressing the spring catches.

"The fourth part is about eight inches in length, and forms a " telescope, with two or more sliding tubes."

The fifth part carries writing or drawing paper.

The sixth part contains Indian ink and hair pencils.

The seventh part contains a turnscrew for taking off the fore part of the pistol barrel.

The eighth part contains gunpowder.

The ninth part contains the pistol balls.

"The eighth and ninth parts are made of brass, and form " together the ferrule of the shaft."

[Printed, 4*d*. No Drawings. See Repertory of Arts, vol. 26 (*second series*), p. 88.]

A.D. 1816, March 23.—N° 4000.

PAULY, Samuel Jean.—A substance for making without seams coats, cloaks, covers for umbrellas, and other articles.

The material referred to "is the peritoneal coat, membrance, " or covering of the cœcum, or blind gut of animals," preferably those of the larger animals, as oxen, cows, and sheep. The skin may be used immediately after it is taken from the animal, or it may be dried, and when wanted soaked in water to make it sufficiently pliant. The skins are then to be placed wet on the model, and joined by laying the edges of the one upon the edges of the other; as the skins dry they become by their glutinous nature united and consolidated; when perfectly dry the whole is to be varnished, outside and inside, with any varnish used for oil skin (such as Mollerstein's composition), which, when cold, is to be laid on with the hand. The skin may be made or moulded into any form of cover wanted to be without seam.

[Printed, 4*d.* No Drawings.]

A.D. 1821, November 1.—N° 4604.

HOBDAY, Samuel.—A method "of manufacturing the furni- " ture of umbrellas and parasols, and of uniting the same " together." Three methods are used, the first "or the groove " or beam principle" consists of a circular ring with an inside groove, and eight notches cut in it, and a stretcher with a small horizontal beam at one end. The second or "socket and ball " method" consists of a circular ring with eight sockets cut in it, a notch made in each, and a stretcher with a ball attached at one end to hang on or fasten to the ring. In the third or "hook and " eye method," the circular ring has eight eyes or holes pierced in the outward rim; and the hook is placed in the ring on these eyes or holes. The rib is set in the socket part of the hook and the stretcher in the rib; the hook end of the stretcher is placed in the eye of the ring attached to the runner; the stick is then passed through the runner, and by moving the runner or large hollow tube the stretcher is raised or depressed. The whole is covered with silk, linen, or cotton; the umbrella is used with eight or more stretchers, formed of whalebone, or silver, copper, iron, or brass.

[Printed, 6*d.* Drawing.]

A.D. 1823, April 22.—N° 4785.

DEAKIN, Francis.—A "method of manufacturing furniture " for, and an improvement to, the mounting of umbrellas and " parasols."

This improvement in the mounting of umbrellas and parasols consists in "the use of steel, iron, and papier maché; and " the coating, covering, and defence, and the application of var- " nish, japan, bronze, or other adhesive substance to it, and the " stretcher joints, runner, guard, and screw; and the dovetail tips " and joints." The advantages which the use of such materials and varnishes will, according to the patentee, confer on the public are "strength combined with elegance, durability, and lightness;"

the tube being lighter than a common stick; while the coating will preserve the material from the effect of moisture.

[Printed, 10*d*. Drawings.]

A.D. 1824, January 15.—N° 4886.

FOOT, JOSEPH.—" An improved umbrella." This invention consists in covering an umbrella stick or frame " with a fabric of " silk and cotton threads made into a web by shooting cotton or " linen shoots upon a silk warp, by which means the surface " of the said fabric or manufacture show more silk than cotton " or linen." The umbrella stick or frame when covered with this fabric is said to form an umbrella more light in the hand and less pervious to rain and less expensive than if covered with cotton or silk.

[Printed, 4*d*. No Drawings.]

A.D. 1826, December 21.—N° 5440.

HANCOCK, JOHN GREGORY.—" A new elastic rod for umbrellas " and other the like purposes."

An osier twig is dried and barked in the usual manner; it is then cut to the required length, and the pith is bored out with an ordinary boring bit, and a " fine bar or wire of steel, or other " elastic metallic substance," is inserted in the tube formed by the removal of the pith. The rod so formed constitutes the invention claimed. It may be planed or shaved down to any required form, flat or round, and then be dyed, stained, painted, or varnished, according to the use to which it is to be applied; and is equally applicable to whips and sticks as to umbrellas. When applied to umbrellas it may be painted and varnished to imitate whalebone. A brass tip is riveted at one end of it; at the other end the metallic bar, or wire, extends beyond the wood of the tube; the end of it is flattened, and a perforation made through the flattened end by which to fix it to the umbrella frame.

[Printed, 4*d*. No Drawings.]

A.D. 1829, January 23.—N° 5761.

CANEY, JOHN HOPPER.—" Improvements in the construction " of umbrellas and parasols."

These improvements consist in a method of forming the joints, and in adapting sliding rings to the inner extremities of the stretchers, when the umbrella is to be made square, or of another form deviating from the ordinary circular shape. In a square umbrella suited to a chaise or open carriage, the expanding ribs are made of different lengths; that is, those ribs that extend to the corners of the umbrella are longer than those which extend to the straight sides; the stretchers which support the ribs when expanded are of different lengths. When the umbrella is closing their inner joints are permitted to slide down the stick, and when it is expanded the sliding rings are brought up, and lock together.

[Printed, 6*d*. Drawing.]

A.D. 1835, March 25.—N° 6797.

BARKER, JOSEPH.—"An improvement in the constructing of "umbrellas and parasols."

By this improvement the umbrellas are constructed without stretchers in the inside; they are placed on the outside, or above the ribs, and termed "suspenders." A screw and slide, or rack and pinion, placed in or near the handle, are applied to work a rod passing up the inside of the cane to its top, forming the stem of the umbrella, and are there connected to a cap to which the suspenders are fastened; by this means the umbrella or parasol is opened with ease and expedition, and when shut the ribs are prevented from falling open by the cap, to which the suspenders are fastened, closing upon shoulders formed in the metal tips inserted in the top notch.

The construction, and several modifications of the operation of the umbrella, are also described at considerable length.

[Printed, 10*d*. Drawing.]

A.D. 1836, April 7.—N° 7053.

RUBERY, JOHN JEREMIAH.—"Improvements in the making "or manufacturing umbrella and parasol stretchers."

By this invention time and manual labour are economised in the various processes, by effecting two, three, or more of the operations at one and the same time by using peculiarly shaped tools and machinery. The wire having been prepared into bundles, and forced through a drawplate to straighten it, the required length for a stretcher is cut off, and the end slit (which is to form the "fork") by a peculiar shaped cutting punch which cuts the ends of two lengths into a curved or rounded form at one time, "that is the runner end of the stretcher last operated upon, and the fork end" of the succeeding stretcher. The end intended to form the fork is then slit for the prongs of the fork, and the wire being moved under the tools for another length, the cutting punch and shears are again brought into operation. The stretchers are then submitted to a second apparatus and tools to distend or force apart the sides forming the prongs of the fork, and in a third apparatus holes are punched for attachments to the whalebones and runners. Various combinations of the parts and machinery are also described.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1837, April 29.—N° 7357.

BARKER, Joseph.—"Improvements in the construction or "making of umbrellas and parasols."

The stick or stem is hollow, to allow a rod to pass freely up and down within it; this rod is fixed to the lower end of the stick and may be drawn down thereby; the ferule, or ring, to which the stretchers are attached, and the stretchers themselves, are of similar construction to those of ordinary umbrellas; but in place of its being affixed to the stem, the ferule is capable of moving on it, and is fixed to the rod by pins passing through the ferule and a slit in the stem. The stretchers are supported by short rods, and attached by wires; the ends of the rods being fixed to the ferule attached to the upper end of the stick of the umbrella. Various sorts of stops may be used.

To put up this umbrella, the stem is held in one hand and the handle pulled by the other, by which means the inner ends of the stretchers are drawn downwards, the outer ends thrown outward and the umbrella opened.

The invention claimed is, causing the ferule to be so arranged that it is capable of being slid or moved downwards together with the inner ends of the stretchers, which are retained above by short rods.

[Printed, 10*d*. Drawing.]

A.D. 1837, November 14.—N° 7475.

RUBERY, John Jeremiah.—(*A communication.*)—"Improve- "ments in the manufacture of part of the furniture of an "*umbrella.*"

The improvements relate to a method of making the metal tips, known as "top tips," that "are placed on the ends of the whale-"bone or other ribs and fit into the 'wheel' or notches formed "in the wheel, and have a wire passed through holes made in "them for the purpose of forming joints upon which the ends of "the ribs turn in opening and closing the umbrella." The improved "top tips" are made out of a sheet of rolled metal by pressing tools, punches, or dies, worked by fly screw presses instead of by the old methods and by hand. From a plate of sheet metal a round blank is cut or pushed out by a punch and counter die. This cup-shaped piece is then placed under the die and punch, and forced into another conical piece forming a "ferule," which is placed in the aperture of the die; other similar pressings give the required flattened "top tip" shape without finishing it by filing or cutting; "top tips" so formed have holes for the joint wires punched or drilled in them, and are then ready for use.

The inventor also describes various improved forms and methods of welding to make the joints perfect, without the necessity of any drilling, filing, cutting, or turning, as in the old mode of forming "top tips" out of solid metal.

By a memorandum of alteration, dated November 14, 1837, the patentee made a few verbal alterations in his specification in order to render the description more clear. Afterwards, an action on the patent having been brought by the patentee, and a jury having decided that certain parts of his invention were not new, these parts were disclaimed by a Disclaimer bearing date May 14, 1838. The parts in question are some of the modifications of the invention referred to above. Also, it having been discovered that by a clerical error in the dating of the Specification, *October* had been substituted for *November*, an order was made by the Master of the Rolls (January 9, 1841) that the record of the enrolment of the Specification should be corrected.

[Printed, 10*d*. Drawings.]

A.D. 1838, July 13.—N° 7735.

COCHRANE, Alexander.—"Improvements in umbrellas and "parasols."

The object of this invention is to bring umbrellas and parasols "when closed into a small space, so as to be contained in a metal

" case tube to represent a walking stick or cane; and also such " tube shall form the handle or stick as well as the case or cover " of the umbrella or parasol, nevertheless the umbrella or parasol " may be used without the tube case, and yet forming a complete " umbrella or parasol."

A tube or stick slides in a rod or cane; the ribs, as in other umbrellas, are confined at top to a ring or top notch fastened to the rod or cane; short stretchers keep the ribs at uniform distances from the rod or cane. A runner slides over the tube or cane for opening and shutting the umbrella; a spring prevents the runner from falling. The silk or cotton covering of the umbrella is fastened so that the action of the slide or runner causes " the ribs to expand to a curvature and shape the umbrella," while thin cords are fastened to strengthen the cover.

To prevent the wind, as much as possible, from turning over the umbrella, a thin cord, or tape, or flexible wire is put round the cover of the umbrella. In ordinary parasols the borders are turned down with a piece of thin cord or twine, sometimes enclosed, and consequently the twine or thin cord forms the same line as the border; in the improved plan the border is not obliged to be turned down, but the thin cord or twine is put on independently of the border, and forms nearly a direct straight line round the cover of the umbrella; " thus, when the wind acts on any part " of the inside of the umbrella, it may push or blow back that " part; but the cord or twine being arranged purposely, pulls the " other or opposite ribs towards the inner part; consequently " the parts that were blown outward are kept in check, and the " umbrella or parasol is not so liable to be turned over as other " umbrellas and parasols.

[Printed, 8*d*. Drawing.]

A.D. 1839, March 27.—N° 8016.

HALE, ELISHA.—" Improvements in umbrellas and parasols."

The invention consists in an umbrella and parasol constructed with a staff and stretchers in two or three sliding pieces, so that it does not occupy more than about one half of its extended length.

A lengthened description is given of the mode by which umbrellas may be constructed, " by the combined using of staffs " (or sticks) and spreaders, having slides and catches, whereby " the umbrella or parasol may be greatly reduced in length; and "in combination with the other parts," "the making the "stretchers in two pieces, and using clasps & catches on them."

[Printed, 6*d*. Drawing.]

A.D. 1839, June 3.—N° 8086.

DE BLIGNY, JOSEPHINE JULIE BESNIER.—"Improvements "in umbrellas and parasols." The invention relates to certain methods of arranging the upper part of umbrella and parasol sticks, whereby they can "stand off at an angle to the lower part "of the stick." The umbrella can be used as an ordinary one, where the stick is in the centre, or it may "stand off from the "centre of the lower part of the stick," and the person using it may have the centre of the umbrella directly over his head.

This is effected by having two joints in the stick, so that the upper part can be brought parallel to, but in a different line from, the lower part, and a rod fixed at either end to runners, of which one slides upon the lower, one upon the upper part of the stick.

[Printed, 10*d*. Drawing.]

A.D. 1840, May 7.—N° 8498.

HOLLAND, HENRY.—"Improvements in the manufacture of "umbrellas and parasols."

These relate chiefly to forming the ribs and stretchers of steel or other metal, by which strength with lightness is attained, and also to a method of constructing and fastening the "joints or "bits" which connect the ribs to the stretchers. The tubes are produced from sheet steel; "the two edges which come together "do not require to be soldered," and are hardened and tempered to the degree "given to saws." Into each end of these stretcher tubes small pieces or "tips" are inserted for attaching the stretchers to the "bits" on the ribs, and for the wires which fasten them to the runners.

[Printed, 6*d*. Drawing.]

A.D. 1841, January 30.—N° 8821.

MACLELLAN, JAMES.—"An improved combination of materials "for umbrella and parasol cloth."

[No Specification enrolled.]

A.D. 1841, March 17.—N° 8885.

KORTRIGHT, Lawrence.—(*A communication.*)—" Certain " improvements in treating and preparing the substance called " whalebone, and the fins and such like other parts of whales; " and rendering the same fit for various commercial and useful " purposes."

By this invention pieces of whalebone are treated so as to increase their thickness, and enable them to be used, amongst other purposes, for umbrella and parasol sticks.

The strips of whalebone are first "assorted as to length, thick-" ness, and breadth, and are then placed between two laths of wood " or other suitable substance, and the whole slightly bound " together and then introduced into a steam-tight tube or box, " open at one end," to be submitted to the action of steam until they are sufficiently soft for the operation of compressing. The machine for this purpose consists of a table upon which a moveable bar may be forced down by levers. The whalebone is placed upon the table, and the bar pressed on it by the action of the levers. Suitable arrangements are made for admitting of the lateral expansion of the whalebone.

[Printed, 1*s*. Drawings.]

A.D. 1842, January 13.—N° 9223.

RUBERY, John Jeremiah.—" Improvements in the manu-" facture of a certain part of umbrella and parasol furniture."

That part of the furniture of an umbrella called the "top " notches" or "wheel," which receives the ends of the whalebone or metal ribs, and has them affixed by wire, is formed by this invention out of sheet metal, by means of suitable dies.

Figures of the punches and dies, and also of the top notches as cut out, are given.

[Printed, 6*d*. Drawing.]

A.D. 1843, July 24.—N° 9851. (* *)

DAVIDGE, Joseph Daniel.—" Improvements in manufactur-" ing certain materials as substitutes for whalebone, applicable to " various useful purposes, and in the machinery for effecting the " same." The materials employed are strips of metal, which, when rolled, drawn, or twisted into tubular forms, are substituted for whalebone in whips, umbrella and parasol frames and sticks, fishing rods, and other articles. The machinery for giving the tubular form is composed of a frame; a bar on which a sliding piece traverses the length of the machine; a mandril; a screw shaft; and two wheels, the upper gearing with the lower. The mandril projects from the axle of the upper, the screw shaft from that of the lower wheel. In the lower part of the sliding piece is cut a thread corresponding with the screw of the shaft; the upper part is formed into a spring clasp by being split down the middle, and it is made to bind against the mandril by means of a thumb screw; immediately under the thumb screw is a slot, through which the strip of metal is passed to be wound on the mandril, its end being attached by passing through a slot in the upper end thereof.

[Printed, 6*d.* Drawing. See London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 257.]

A.D. 1844, February 6.—N° 10,035.

SANGSTER, William.—"Improvements in umbrellas and "parasols."

The improved apparatus consists of a stop within reach of the hand supporting the umbrella, which is connected with the runner so that the umbrella may be closed without the use of the other hand.

[Printed, 10*d.* Drawing.]

A.D. 1844, September 12.—N° 10,307.

PICKEN, George Bucknall.—"Improvements in umbrellas "and parasols."

The ribs, stretchers, and "suspenders" of parasols and umbrellas are covered and bound round with floss silk, or other fibrous material, by which the covers of those parts will be less liable to be rubbed and injured by the friction of the ribs.

This is done by a method similar to that followed in making "gimp." Sometimes a thin coating of a solution of india-rubber is applied before lapping the floss.

The second part of the invention consists of an improved parasol, which may be opened or closed by the same hand, the ribs when down being prevented from opening without any fastening placed on the outside of the parasol. A rod slides within the stick, connected at top to the runner and at bottom to a stud which may be moved by the thumb of the person holding the parasol.

In the third and fourth parts of the invention modifications of the top notch are described, by which it receives the runner when the umbrella is closed, and keeps it shut.

The fifth part of this invention is a new way of making the top notch from sheet metal.

[Printed, 2*s*. 4*d*. Drawing.]

A.D. 1844, December 2.—N° 10,415.

RUBERY, John Jeremiah.—"Improvements in the manu-" facture of umbrellas and parasols."

The invention consists, firstly, of a mode of retaining the runners of umbrellas up by means of a spring attached to the stick above the runner, which catches and holds it when the umbrella is open.

And, secondly, of a mode of making top notches and runners, by which "notched discs of metal are affixed to tubes," instead of making the whole runner from one piece.

Several modifications of the new top notch are given.

[Printed, 8*d*. Drawing.]

A.D. 1845, January 11.—N° 10,455.

LUND, Henry.—"Improvements in the manufacture of um-" brellas and parasols." These improvements consist in arranging portions of the umbrella or parasol, so that when the stem is held vertically with its point upward, the umbrella will open "by the" gravitation or descent of some of those parts." When the point is turned downwards, and the stick vertical, the gravitation of the parts will cause the parasol to shut. The silk is attached to the ribs in the usual manner. A tube slides freely within another to form the handle. The end of each stretcher is fixed to the top of the larger or outer tube, and the end of each rib by the top notch to the smaller tube; the larger tube forms the stick or handle, and when it is held point upwards the smaller tube descends by its own weight and carries the ends of the ribs along with it, which spreads the stretchers and opens the umbrella. By reversing the umbrella a contrary action takes place; the smaller tube passes or slides out of the larger tube by its own weight, and so gathers the stretchers together and shuts the umbrella. To keep the silk stretched tightly a spring catch is placed in the smaller of the tubes.

[Printed, 10*d*. Drawing.]

A.D. 1845, January 16.—N° 10,478.

BOSS, Isaac Abraham.—These "improvements in the manu-"facture of parasols and umbrellas" relate chiefly to contrivances for opening and closing them. Numerous modifications of the main principle are given, rendering it applicable to various descriptions of parasols and umbrellas, but the principal novelty is in the use of jointed stretchers, supplementary stretchers, and an arrangement of a system of lazy tongs levers to connect the top notch and runner.

In the first part of the invention the handle is made of a metal tube carrying the top notch. Within this moves a rod carrying the runner, and having a lever at its lower end by which it may be moved up and down, and the parasol opened or closed. The stretchers have a joint about the middle, and tension rods stretch from the joints to the top notch. Various modifications of the main principle are described, of which the chief is the lazy tongs arrangement to diminish the distance over which the runner moves. Amongst other modifications some applicable to ordinary parasols with solid sticks are given. More than forty drawings of various parts are shown.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1845, October 24.—N° 10,895.

THOMAS, William.—These improvements in the manufacture of umbrellas consist in constructing them "so that the centre of "the covering will be in the centre of the body of the person "using it, thereby giving equal protection to all parts of the "clothing alike." The ribs are attached to the collar or runner; two "radious bars" are jointed on the stick, corresponding to two other bearings working into the upper part of the stem. "By "holding the lower portion of the stick in the right hand, and "putting the upper portion of the stem to the left, the upper "portion will be drawn out of centre, and will retain a vertical "and parallel position, throwing the umbrella out of centre, so "as to be held over the centre of the body of the holder."

A ferule with a bayonet notch is also described, which when locked in the pin secures the whole, so that when the runner or piston block is drawn down, it catches over the spring and closes the parasol. Several combinations of the springs and catches are also given.

[Printed, 10*d*. Drawing.]

A.D. 1846, September 25.—N° 11,149.

SMITH, CHARLES.—" Improvements in cooking and culinary " utensils, and methods of heating and suspending or fastening " articles of domestic use, and similar purposes."

The only parts of this invention connected with this series relates to the construction of a combined " brazier, umbrella " stand, and cloths horse." A recess is formed in the stand to hold a vessel containing "hot liquid or other suitable matter" by which articles placed on the stand are dried. Umbrella handles may also be formed with sockets to hold heating matters.

[Printed, 3*s*. 6*d*. Drawings.]

A.D. 1847, November 2.—N° 11,929.

MEYER, MEYER. — " Improvements in the manufacture of " umbrellas and parasols."

A hole is drilled through the whalebone rib to receive a pin carrying an eye piece, to which the forked metal stretcher is jointed. The forked end of the metal stretcher embraces the eye piece, and a pin passed through the holes and riveted completes the joint. The whalebone rib is not weakened, or so liable to split as when pierced sideways. The eye piece may be forked instead of the stretcher.

The eye piece may be formed also of metal wire.

The second part of the invention is a spring clasp for retaining the parasol in a closed position.

[Printed, 6*d*. Drawing.]

A.D. 1848, February 8.—N° 12,056.

SANGSTER, WILLIAM. — " Improvements in umbrellas and " parasols."

Fabrics containing more or less of alpaca, wool, or mohair, are combined with suitable frames, " thus producing a new manufacture of umbrellas and parasols."

These fabrics are made of cotton warp and alpaca weft, in pieces of suitable size.

Where parasols have linings of a different colour to the external covering, the lining fabrics are caused to adhere, so as to compose a compound fabric, and then the parasol is made up as if a single fabric only were used.

[Printed, 4*d*. No Drawings.]

A.D. 1849, February 28.—Nº 12,487.

BARKER, Joseph.—" An improved method of constructing " umbrellas and parasols."

In this method the wires ordinarily employed to support the stretchers are dispensed with, and the umbrella or parasol is opened by lowering the ends of stretchers attached to springs and closed by the ends of the stretchers being raised.

[Printed, 6*d*. Drawing.]

A.D. 1849, June 20.—Nº 12,664.

JACOB, William Combauld.—" Improvements in the manu- " facture of parasols and umbrellas." These consist in covering their frames with a new material formed by shooting a warp of cotton with a weft of silk, or linen, or of silk and linen. The fabrics are woven close of fine warp and weft; the warp having about 80 threads to the square inch, and the warp about 110; and are of the widths most convenient for being cut into coverings.

[Printed, 4*d*. No Drawings.]

A.D. 1850, August 13.—Nº 13,223.

PITTAR, Samuel John.—" Improvements in umbrellas and " parasols."

These improvements are intended for that class of umbrellas formed with each rib composed of pieces connected together by a hinge joint, so as to admit of the outer portion of the ribs being folded back upon the inner portion when the umbrella is not in use, by which the instrument is rendered more portable. Three metallic tubes slide one within the other, and form the handle; they are prevented being totally withdrawn from each other by a stud, and are supported by a catch and a blade spring. The ribs are in two parts, connected by a hinge. Stretchers are connected at one end to the hinge by a pin joint, and at the other to the runner. The runner is pushed upwards to close the umbrella, and downwards to open it. A ferule is shown which screws into the upper end of the highest tube, and holds on the silk. A method of applying a sliding ferule to admit the umbrella being used as a walking stick is also given, and various constructions of umbrella folding joints and hinges, and telescopic tubular handles of three or more lengths. The hinge may be attached to the rod " by " stamping, striking, or pressing," " so as to lap round or attach " it to the rib." A runner catch is also shown in which the runner is held both above and below.

[Printed, 10*d*. Drawings.]

A.D. 1850, August 22.—N° 13,227.

HOLLAND, Henry.—" Improvements in the manufacture of " umbrellas and parasols."

This invention relates, firstly, to " improvements in the manner " of making umbrella and parasol ribs of elastic metals;" and secondly, to a mode of constructing steel stretchers for umbrellas and parasols.

The ribs are made of steel tubes, curved to an elliptical shape, with a stretcher "joint or bit" made of square annealed wire fastened to each, and holes bored in a particular manner near the tips. Also the ivory tips are inserted into the holes in the steel tubes.

The stretchers are made with such a flatness as to limit their elastic movements to a curve in a direction towards the notch.

Parts of the present Specification describe improvements on inventions for which Letters Patent were granted A.D. 1840.

[Printed, 8*d*. Drawing.]

A.D. 1851, March 13.—N° 13,554.

DAWSON, Thomas.—" An improved method of constructing " umbrellas and parasols."

This improved method has relation chiefly to forming walking stick umbrellas in such a manner that they may be folded into a smaller compass.

The first part of this invention consists in forming the stick hollow, so that the umbrella may be detached from it and placed inside when folded. The upper part of the handle is formed of a short rod, which screws into the end of the hollow case when the umbrella is spread. By another arrangement the stick may be screwed to the runner.

Another part of the invention consists in placing the ribs outside the covering, and making them of such width that when the umbrella is folded up they form a complete covering or envelope to the cloth, and "exhibit in their collapsed state all the appear-" ance of a ribbed walking stick." To retain it in this folded state a ring with a bayonet joint is drawn over the whole set of ribs, and made to slide up and down upon the central rod or umbrella stick, and the handle is made to slide over the ends of the ribs.

By another part of the invention parasols are formed that are capable of being expanded to the size of an umbrella. The lower and outer portion of the cover is made with an elastic band, and the ribs in two pieces, the upper of which is jointed to the stick and to the stretchers, while the lower piece slides in a groove, and is retained in its place by guides. This lower part is furnished with a series of knobs to which the outer covering is attached. When expanded to the umbrella size, the lower pieces of the ribs are each drawn out successively to their full extent by hand; the portion of the covering expands along with them, and thus increases the area of the covering. When the ribs are shortened the elastic band gathers up the outer portion of the covering into the inside of the parasol, and there it has the appearance of a drawn curtain.

[Printed, 10*d*. Drawing.]

A.D. 1852, April 6.—N° 14,055.

FOX, SAMUEL.—By these "improvements in umbrellas and " parasols," the ribs and stretchers of parasols are formed of a fillet or narrow strip of steel plate, partially bent into a trough-like form. This bending is performed by rollers, one having a groove around it, and the other a corresponding projection. By being passed between and through such rollers, the fillet or sheet of steel is bent into the required form. It is further bent by being passed between another grove and corresponding projection in another pair of rollers. The open and trough-like ribs thus manufactured are used instead of the common description. A method of jointing and connecting them is shown.

[Printed, 10*d*. Drawing.]

A.D. 1852, August 3.—N° 14,251.

HETHERINGTON, WILLIAM. — "Improved machinery for "stamping or shaping metals."

The "essence" of the invention consists "in the pressure by "an annular die of those portions of the plate or sheet of metal "to be stamped or shaped, situated near the circumference or "edge of the said plate or sheet in or upon the lower or stationary "die during the descent of the stamp through the same annular "die, so that during the pressure of the said sheet or plate of "metal into the said lower or stationary die the portions of the "said sheet or plate of metal situated near the circumference of "the same shall be drawn between two surfaces, which, by the "pressure they cause, prevent the formation of creases or "wrinkles."

This invention, though not applied by the original patentee to purposes connected with this series, is referred to in Baugh's Specification, No. 1966, A.D. 1859, and is therefore included.

[Printed, 10*d*. Drawing.]

A.D. 1852, November 27.—N° 14,348.

POOLE, MOSES.—(*A communication from Mr. Goodyear.*)—"Improvements in the elastic ribs, sticks, and fillets, used in the "manufacture of umbrellas and parasols, and various other "articles, in substitution of whalebone and steel heretofore "employed."

The invention consists in using a composition formed of two parts by weight of india-rubber, and one part by weight of sulphur; some foreign matter is introduced which tends to reduce the elasticity resulting from the use of sulphur and rubber alone. The sulphur and rubber are intimately mixed by kneading, and when the compound is to be employed for solid or hollow handles they are made from it after it has been rolled into a sheet. They are cemented into a tubular form, and then subjected to the process of heating to about 210 F.

To obtain the best elastic compound, the article should be heated for six hours, the heat raised slowly to 230 F., then slowly to 305 F., and the sheets placed between two plates of iron or glass and then immersed in an oil bath and lard oil.

[Printed, 4*d*. No Drawings.]

PATENT LAW AMENDMENT ACT, 1852.

1852.

A.D. 1852, October 1.—N° 64. (* *)

FANSHAWE, Henry Richardson. — "Improvements in " shawls, scarfs, neckerchiefs, handkerchiefs, mantles, sails or " sailcloth, tablecloths and table covers, napkins, and umbrella " and parasol tops and covers, and in an improved loom for " weaving, applicable especially to the said improvements in " repect to some of the said articles."

It is proposed to make the above mentioned articles "in cur- " vilinear forms." They "may be rendered completely water- " proof" by waterproofing in the usual manner.

"The improved loom is described, as having harness similar, " in all the details thereof, to the ordinary harness, only that " each row of harness shall have the form of a divided hoop, " round, oval, or curved, in such way, or to such particular " inclines or curves, as may be required in the article to be " woven, each row of harness being connected with its own hoop " or corded tumbler; or the several parts of the harness or the " 'corded tumblers' may be formed as portions of a hoop, and " used instead of one hoop, which will be found the plan most " generally suitable; a shuttle or conveyor of the thread," "being " provided, and arranged so as to travel within this hoop " harness."

The whole arrangement and working of the loom is described at length.

[Printed, 8*d*. Drawing.]

A.D. 1852, October 19.—N° 438. (* *)

HARCOURT, Joseph, and HARCOURT, William.—(*Provisional protection only.*)—"The application of porcelain, glass, " or earthenware to articles in which or for which those materials " have never heretofore been used," namely, to stick, parasol, and umbrella mounts and numerous other articles.

[Printed, 4*d*. No Drawings.]

A.D. 1852, October 27.—N° 535.

CONRY, James.—"Improvements in umbrellas and parasols."

An improved method of attaching the stretcher to that part of the umbrella called "the bone," whether of whalebone or metal, by means of a fork shaped stud with a small hole in it. The two forks of the stud are pierced, not with the grain, but across it, through the bone where the stretcher is riveted at the back; that part of the stud with the hole projects from the bone, and inside the umbrella, and the stretcher with the forked end clips the stud and is riveted to it instead of to the bone as in the common manner. The bones lie closer to the stick, do not wear the outside covering, or split the whalebone as in the ordinary form.

[Printed, 6*d*. Drawing.]

A.D. 1852, November 15.—N° 756. (* *)

JENNINGS, Francis Montgomery.—"Improvements in preparing flax, hemp, China grass, and other vegetable fibrous " substances." The invention consists in causing the substances mentioned "to be impregnated with soap, or soapy matters, and " then subjecting them to the action of an acid, for the purpose of " extracting from them the alkali of the soap, and leaving them " impregnated with the oily, fatty, waxy, or resinous matters of " the soap, so as to render them more soft and pliable, and, in " some cases, give them a more lustrous appearance." The substances may be treated thus either before, during, or after being made into thread or cloth.

Substances requiring it are to be first cleansed by steeping in an alkaline solution, either hot or cold; or alternately in weak acid and alkaline solutions, and afterwards washing in water. If it be intended to bleach the material, the patentee prefers that to be done before treating it according to the invention.

The fibrous substances are to be tied in bundles, and plunged repeatedly into water heated to a temperature of from 190° to 212° Fahrenheit. To further cleanse the fibres an alkali or alkaline solution is to be added. The patentee prefers caustic soda, or potash, or their carbonates, the solution being made "of " a strength varying from being barely alkaline, say 1001 specific " gravity, to 1025 or more." The fibres are then to be washed in water and immersed in a solution of soap, and " agitation " applied until the fibres become sufficiently impregnated with " the soapy matters." Any description of soap may be used, and may be made to contain any particular substance with which it is desired to impregnate the material. To accelerate the process, an excess of alkali may be added to the solution, and the temperature raised to from 190° to 212° Fahrenheit.

Having been impregnated with the soap, the fibres are subjected to the action of an acid solution, or acid gas; the acid of which, uniting with the alkali of the soap, liberates the fatty or resinous matters. The patentee prefers to use, as an acid, vinegar, or dilute acetic acid, raised to a temperature a little below the boiling point. Dilute sulphuric or muriatic acids, or the vapour of sulphurous or acetic acids may also be used. In some cases it may then be desirable to wash the material in a weak alkaline solution, and it is then to be dried as most convenient.

If chloride of lime, or such bleaching compounds have been applied to the material, the patentee prefers to wash it in water, and then decompose the chlorine by the application of sulphurous acid. Coarse and dirty materials should be boiled in an alkaline solution before treating according to the invention. The processes may be carried on under pressure or not.

This Specification is referred to in Tongue's Specification, No. 3262, A.D. 1861, when the process is used to prepare umbrella coverings.

[Printed, *4d.* No Drawings.]

A.D. 1852, November 25.—N° 863.

HOLLAND, HENRY.—" Improvements in the manufacture of " umbrellas and parasols."

Parasol sticks have formerly been jointed in the middle for the convenience of folding; a long or connecting piece of brass being inserted to join the upper and lower portions of the stick, and a taper slide used to pass over and bind the parts. In the improvement a taper tube is substituted for the upper part of the parasol stick, and the handle jointed by a tong to a taper stick, which slides up and down within the taper tube. In this piece are two springs which pass through nicks in the taper tube; when the joint and about an inch of the handle part is pushed up the tube, one spring fastens the tube and its contents together. When the parasol is open, the runner lies on the top spring.

By this construction is obtained "the combined action of "releasing the runner from the spring, at the same time as the "joint is released from the tube."

The last part of this invention comprises the use of flat steel wire for the ribs of umbrellas and parasols, so that the edge will lie against the cover.

[Printed, 6*d*. Drawing.]

A.D. 1852, December 15.—N° 1070.

DRESSER, Clement.—(*A communication.*)—"Improvements "in combining materials to be used in substitution of whalebone "and other flexible and elastic substances."

The invention consists in saturating Indian cane or similar substances with resins, gutta percha, shell lac, sulphur, or other waterproof substances. The cane is shelled to give it "binding and "elastic properties combined with impermeability," and formed into quadrangular rods by two machines; the rods are then cut into the lengths required, and dyed of the colour wanted; they are next boiled to remove superfluous moisture; and placed in an air-tight iron vessel heated by steam. Some of the resins, as guttà percha and shell lac, are placed in another vessel also heated by steam; the vessel in which the cane rods are placed has the air removed, and a communication opened with the vessel containing the solutions, when the pressure of the air forces the solutions into the vessel, and impregnates the canes. The rods are then well ventilated and heated, and whilst hot are pressed on all four sides to render them hard and impenetrable. The pressure may be produced by grooved cylinders or other means. Finally the rods are drawn through a machine.

[Printed, 6*d*. Drawing.]

A.D. 1852, December 24.—N° 1164.

LUBLINSKI, Robert.—(*Provisional protection only.*)—"Im-"proved joint for umbrella and parasol sticks."

A hinge joint fastening for the sticks of umbrellas, which brings the two parts of the stick together into a right line, and retains them, yet allows the upper part of the stick to be folded over. The adjoining ends of the stick have one a plug, the other a ferule to receive the plug; a short chain is fixed to the plug, and this chain by means of a coiled spring which bears against the head of a bolt on the end of a chain, and a stop piece in the ferule, when drawn outward, runs back into the tube, and draws the cone socket into its seat, thus uniting the two parts of the stick. On the stem of the bolt, which is joined to the chain, shoulders are formed which allow the bolt in one position to pass the stop, but when it is moved a little way round they prevent its return.

[Printed, *4d.* No Drawings.]

1853.

A.D. 1853, January 25.—N° 188.

SANGSTER, John. — (*A communication.*)—" Improvements in " umbrellas and parasols."

" This invention is applicable to the sticks of umbrellas that are " made to fold in their length ;" and consists in connecting the two portions by an intermediate piece, and two knuckle or pin joints, over which is an outer tube with slits in it. " When the " slits in the tube correspond with or are opposite to the joints, " the joints can be folded; but if the slits are moved away " from the joints by turning the tube partly und no folding of " the joints can take place.

[Printed, *6d.* Drawing.]

A.D. 1853, February 2.—N° 287.

ABADIE, Ismael Isaac, and LAURET, Henri.—" Improved " manufacture of parasols."

This arrangement is more particularly applicable to parasols, the heads of which may be " set at an angle to the stem." Into the hollow main stem of the parasol the lower end of a jointed tube is inserted, the other end passing through two short horizontal sliding tubes, which severally carry a set of stays for opening and closing the parasol. To the end of this tube the stretchers and the two sets of stays are jointed. By drawing down the outer sliding tube the parasol is closed, and is retained by a spring catch. The lower part of the jointed tube contains a coiled spring which draws the joint out of the tube into the hollow main stem to strengthen it; the upper half of the tube has also a spring that forces down the inner sliding tube, and this expands the stays and the parasol opens, the runner being disengaged from its catch by a small lever. To allow the parasol to be folded it has a joint that may be made rigid by a slider. An advantage of this parasol is that it may be opened by the thumb at the handle instead of using both hands.

[Printed, 8*d*. Drawings.]

A.D. 1853, February 23.—N° 462.

ENGERT, ADAM CYRUS.—(*A communication from Alexander Porecky.*)—" Improvements in joints for the sticks of parasols."

To manufacture a spring joint, a metal tube is split along its whole length, and the slit widened by introducing " cheek pieces." The spring tube forms the centre part of the joint, at each end through the slit is introduced the flattened end of a socket, or ferule, which is retained within the cheek pieces by a stud or pin, the cheek, or side pieces, being retained within the spring slit tube by a stud. One socket carries the handle of the parasol stick, the other the top of the stick.

The method may be applied for the purpose of securing the blades of knives to the handles.

[Printed, 6*d*. Drawing.]

A.D. 1853, March 28.—N° 739.

FOX, SAMUEL.—" An improvement in the frames of umbrellas " and parasols," applicable to the stretchers of the frames by " giving to the joint, by which a stretcher is connected to a rib, " additional strength, by causing the stretcher at its end to have " three projections, one to enter between the strap or middle " bit (which embraces the rib) and the other two to come out- " side of the ends of the strap, wire, or pin which makes the " connection passing through the whole."

To carry out the invention, a fork-shaped piece of metal is cut out of sheet iron, and fastened to a single fork stretcher in such a way as to make a triple fork, which is attached to the rib in the usual way.

[Printed, 6*d.* Drawing.]

A.D. 1853, May 13.—Nº 1179.

EIDMANS, JOSEPH STAYNER.—(*Provisional protection only.*)— "Certain improvements in umbrellas & parasols."

This improvement consists in so constructing the handles, or that part of the stem by which the umbrella is held when expanded, that it is free to rotate while the handle is held firmly in the hand. This is effected by fixing a socket tube on the stem between the two collars.

[Printed, 4*d.* No Drawings.]

A.D. 1853, May 26.—Nº 1288.

PORECKY, ALEXANDER.—"Improvements in the manufacture "of umbrellas and parasols."

These improvements consist in making the set of ribs or stretchers for an umbrella out of a single piece of metal, by taking a long ribbon of sheet metal and cutting it into eight strips, each one-eighth of an inch in breadth, leaving them attached to the end piece, which is turned into a tube. In this tube the stick slides. The ribs and stretchers are attached at the ends by means of a ring, and the parasol or umbrella may be expanded by holding the tube with one, and pressing the stick upwards with the other hand.

[Printed, 8*d.* Drawings.]

A.D. 1853, June 25.—Nº 1551. (* *)

SANDOZ, ALFRED.—(*A communication from Philipe Henri Matthey Doret.*)—"A solar watch."

This invention "consists in combining a compass with a "fixed ring or dial marked with the hours of the day, from "4 a.m. to 8 p.m. inclusive, and with an upright split rod "fixed to the dial opposite the north point on the compass, "in which a piece of silk, stretched from the opposite part of "the dial, is capable of being adjusted according to the quarter "of the globe in which the instrument is used. The silk being "adjusted, the instrument must be held perfectly horizontal; the

" needle must point due north, and be exposed to the sun's rays, " when the shadow from the silk cord will be cast upon a figure " or between two figures upon the dial, which will give the hour " of the day."

The drawings show this instrument contained in the handle of a walking stick, in which case, for the purpose of ensuring its being held in a "horizontal position," a rod is passed "through " an aperture in the stick." "By applying a finger and thumb " to the ends of the rod," "the stick will be balanced, and the " dial will be held in a horizontal position."

[Printed, 8*d*. Drawings.]

A.D. 1853, July 9.—N° 1635. (* *)

RESTELL, THOMAS.—"Improvements in walking-stick umbrellas, applicable also to parasols." These consist "in the " formation of an umbrella" or "parasol," "which may be used " also as a walking stick." Their "construction is of the ordinary description, excepting that in some cases" both ends of " the stick" are formed alike, and the thread of a screw is cut " upon a small portion of their extremities." "One end of the " stick part is made longer than the other, and forms the " handle of the umbrella when the apparatus is used as such." " When used as a stick the umbrella is closed, and covered with " an outer case made of a metal tube, or it may be made of a tube " of vulcanized india-rubber or any other suitable material." " One end of this case is closed with a knob or a handle of any " device that may be desired, which is free to turn round, so " that the inner portion having a thread cut upon it corresponding to the thread on each end of the stick shall, when " the case is passed over the closed umbrella or parasol, and " the handle turned so as to bring the threads of the screws " together, render the two parts firm, and prevent the case from " being drawn off. When it is desired to use the umbrella, the " outer case is taken off by turning the handle in the reverse " direction. The umbrella, is then opened, and the case is " caused to slide over the stick of the umbrella until the handle " is brought into contact with the screw, when it is fastened as " before described. In this case that part of the stick which " formed the point when used for walking now becomes the " handle, the umbrella being reversed. Instead of using a screw

" at each end, a bayonet joint or any other similar and suitable " contrivance may be used, taking care that the handle be made " to suit such an arrangement."

[Printed, 8*d*. Drawing.]

A.D. 1853, July 9.—N° 1638.

PEPPIN, Henry Hoskyn.—(*A communication.*)—"Improved " joint for umbrella and parasol sticks."

An invention for a hinged joint which brings the two parts of the stick together into a right line, and retains them so, yet allows the upper part of the stick to be folded over like the common jointed stick. The adjoining ends of the stick are fitted—one with a conical plug, the other with a tube to receive it; to this plug a short chain is fixed, which, by means of a coiled spring bearing against the head of a bolt attached to the end of a chain, and a stop-piece in the tube, has a tendency to run back, draw the cone socket into its seat, and unite the two parts of the stick. A shoulder on the bolt prevents its returning when turned a small way round.

[Printed, 6*d*. Drawing.]

A.D. 1853, September 6.—N° 2054.

SOMMERVILLE, Alfred, and TWIGG, Charles.—"Im- " provements in penholders, and which said improvements are " applicable to the manufacture of umbrella and parasol sticks, " cornice poles, and other such like articles."

The invention consists in applying paper pulp to the purposes mentioned.

The articles are formed by pressing the material in the form of pulp between rollers, the faces of which are sunk to be the exact counterparts of each other, and form dies and moulds for the articles wanted; the articles produced are japanned and finished in the ordinary way of "papier machee" goods. Besides sticks for umbrellas and parasols the pulp is made into penholders, cornice or curtain poles, and rings, and other articles not before made of such material. A machine for pressing the pulp into the dies is described.

[Printed, 8*d*. Drawing.]

A.D. 1853, September 8.—N° 2065.

HARRINGTON, Robert.—" Improvements in umbrellas and " parasols."

" The stick, stock, tube, cane, or handle " is removed " several " inches from the centres of umbrellas and parasols, thereby " allowing the umbrella or parasol to be over the centre of the " person useing it." To accomplish this the stick may have one or more cranks or bends producing an elbow. Or an arm or elbow of metal, wood, or bone, having a socket at each end, into which the parts of the stick are fixed by rivet or socket joints, projects from the centre under the stretchers, when the umbrella is open, and may be disconnected from its sockets, and form the usual straight stick in the centre.

The runner is made short, so as to pass over the cranked part of the stick, and a fastening, consisting of "two small fingers or " levers " is given.

[Printed, 6*d*. Drawing.]

A.D. 1853, October 6.—N° 2289.

RUBERY, John.—(*A communication.*)—" Improvements in the " manufacture of umbrella and parasol furniture."

Zinc is used instead of brass in the making of notches. Discs are cut out of sheet zinc and the notches manufactured in the usual method.

[Printed, 6*d*. Drawing.]

A.D. 1853, October 27.—N° 2485.

DAWSON, Thomas.—(*Provisional protection only.*)—" An im- " proved case or cover for umbrellas, which can also be worn as " a garment."

" I form," says the patentee, " my cover of some waterproof " material, which I previously cut in the form of a garment to " cover the shoulders. I provide it with a button and loop, or " other suitable fastening ; and when not worn on the shoulders " the umbrella is inserted and rolled in it, the loop and button " fastened, and the case assumes a neat and sightly appearance."

[Printed, 4*d*. No Drawings.]

A.D. 1853, November 5.—N° 2575.

RUBERY, JOHN.—" Improvements in the manufacture of open " caps for sticks of umbrellas and parasols."

The invention consists in manufacturing open caps of umbrellas and parasols of zinc instead of brass. Thin sheet zinc is " cut " into discs of suitable sizes by a fly press or otherwise, and these " discs are then by stamping or pressure raised into the form of " caps, the central portion being cut out to allow of the caps " passing on to the sticks." In making such open caps of zinc the metal does not require annealing.

[Printed, 6*d*. Drawing.]

A.D. 1853, November 10.—N° 2602. (* *)

PIDDING, WILLIAM. — (*Provisional protection only.*)—" Im" provements in the manufacture of fabrics made of silk, cotton, " wool, flax, hemp, straw, grasses, fibres, mohair and other hair, " spun glass, and enamelled, glazed, or plain wire, and in the " application of some of those materials, and also in the ma" chinery or apparatus connected with such manufacture." The Patent relates to improvements upon a former invention for preparing india-rubber for fabrics, No. 598 of 1853. These improvements consist in causing "raised looped pile" of the above named materials to be "adhered" "to any appropriate " material with any appropriate adhesive substance."

The looped pile is manufactured by first printing an adhesive substance on such parts of " the weft or warp " as are to adhere, and then pressing " the weft or warp " on to such extended sheets of india-rubber, which are afterwards allowed to contract. A method of cutting and splitting pile fabrics is described.

The only mention of any article connected with the present series is in the following extract :—" The applications are mohair, " especially for bonnets, in any form, and straw in the form " which it will take in accordance with my present invention for " bonnets and other articles, also straw for parasols in such form " or in any other."

[Printed, 4*d*. Woodcut.]

A.D. 1853, December 15.—N° 2911.

CALLIER, AIGNAN BERNARD.—" Improvements in the manu" facture of umbrellas and parasols."

The improvements consist, firstly, in a modification of the ordinary umbrella fastening. The fastening is attached to the umbrella by a washer and a plug which passes through the stuff of the cover.

Secondly, in an application of the same method of fastening to fix the corners of the umbrella to the rib.

Thirdly, in a riveting apparatus for fixing these fastenings on the umbrella.

[Printed, 8*d*. Drawings.]

1854.

A.D. 1854, January 17.—N° 109.

HOLLAND, Henry.—" Improvements in the construction of " parts of umbrellas and parasols."

The runner is made of one piece of metal, so that the notch forms merely an enlargement of the tube; this is grooved in the usual manner. The slits for the reception of the stretcher ends are cut into the tubes, thus the diameter of the notch is reduced, while an increased strength is obtained.

The above process may be applied to the manufacture of top notches.

Secondly, an improved method is described of making the "top notch ends," or the " eyes " at the extremities of the ribs when made of steel wire, which is to enlarge the end of the wire previously to its being flattened and pierced to form the eye.

[Printed, 8*d*. Drawing.]

A.D. 1854, February 6.—N° 287. (* *)

VANDER MEERE, Comte Auguste Louis Nicolas. —(*A communication.*)—" The manufacture of artificial whalebone, or a " substance capable of being employed as a substitute for whale- " bone and tortoise shell."

The invention consists in softening horn, and rendering it " flexible and elastic like ordinary whalebone." This may be effected by steeping the horn for several days in water containing five per cent. of "glycerine," or in water alone which has "become putrid and ammoniacal," and afterwards in a bath composed of three quarts of nitric acid of commerce, and two quarts of pyroligneous acid of commerce (or vinegar), and twelve pounds and a half of tannin, and five pounds of bitartrate of potash (or white wine), and five pounds of sulphate of zinc, dissolved and mixed with "twenty-five gallons of water;" "or, in "lieu of this bath, the horn may be immersed for several days "in a hot or cold bath of water containing animal matter." Horn so treated is rendered pliable and ductile, and may by pressure and heat be formed into various useful shapes. Various stains "may be employed, as in staining ordinary horn and ivory "and other substances." "It may be stained like ordinary horn "to resemble tortoiseshell." "The toughness and elasticity "which it acquires by the treatment herein-before described "render it well adapted for making," amongst other articles, the "ribs of umbrellas and parasols."

[Printed, *4d.* No Drawings.]

A.D. 1854, March 2.—N° 513. (* *)

DAWSON, Thomas.—"Improvements in umbrellas and parasols." It consists "in covering the frames of umbrellas and "parasols with a cover of cloth or other suitable material, whether "made waterproof or not, the joints of which are formed, united, "or secured by a solution of caoutchouc, gutta percha, or other "like adhesive material, spread upon strips of silk or other "suitable material, or upon overlapping parts at the edges of such "joints."

An eyelet may be inserted "in the ends of the quarters" for the purpose of tyeing them to the "ends of the ribs" by a thread.

[Printed, 4d. No Drawings.]

A.D. 1854, March 7.—N° 546.

CHANT, George. — (*Provisional protection only.*) — "A fan "parasol or sunshade."

The invention consists in constructing pan parasols or sunshades with a framework of rods or arms so formed and arranged, that by "levers, or cords, or slides, or springs," or a combination of them, the shades may be spread or collapsed at pleasure.

The centre rod is fixed in a handle, the side rods are cranked at their lower ends, and jointed at their elbows to the centre rod; the projecting extremities of the lower ends are attached by short connecting rods to a slide upon the rod, by means of which the shade may be collapsed or spread.

[Printed, 6*d*. Drawing.]

A.D. 1854, April 6.—N° 798.

CHANES, Josef.—(*Provisional protection only.*)—"An improve-"ment in the manufacture of ribs of umbrellas and parasols, and "of busks and substitutes for bones of stays and dresses."

The invention consists in making horn into the forms required for the ribs and busks.

[Printed, 4*d*. No Drawings.]

A.D. 1854, May 11.—N° 1054.

ABBOTT, Edward William.—(*Provisional protection only.*)—"Improvements applicable to the manufacture of umbrellas and "parasols, and cases for containing the same."

The invention relates to a modification of the form of certain parts of umbrellas, to render them less bulky and more sightly. Instead of making the stick of a round tube, it is of rolled metal having the figure of a cross in cross section. The angular recesses thus obtained receive the ribs and stretchers, two of which lie in each recess. The stretchers are of steel, which permits the forked ends being lessened. Instead of the wheel for carrying the ribs they are strung on a metal ring supported in notches cut in the leaves of the central stem, and to the stem bow springs are attached to bend against the inner periphery of the runner, and hold it in position. By this arrangement common spring catches are done away with.

[Printed, 4*d*. No Drawings.]

A.D. 1854, May 12.—N° 1063. (* *)

AUBUSSON, Charles William Feuillade. — "An im-"*provement* in ferrules."—This consists in applying to these articles "vulcanized india rubber at the lower end thereof" to prevent noise arising from their use. These ferrules may be used "for walking sticks, umbrellas, crutches," &c. The ferrule is turned inwards at the bottom, so as to form a flanch; resting upon this, in the interior is a "ring of gutta percha or gutta percha "mixed with india rubber or other material, through which the "india-rubber is partly passed, and in such manner that the "vulcanized india rubber may be securely girt in by this ring "and the flanch. In order thus to girt in the vulcanized "india rubber, it is stretched or extended, and the stretched part "bound round with thread or twine, so as to retain it in its "extended form, and thus admit of part being readily passed "through the ring or collar," "and through the open end of the "ferrule;" "on removing the binding thread or twine the vulcanized india rubber will contract in length and expand or "resume its original form, where it is not confined by the collar "or ring, and in the flanch of the ferrule." "The interior of "the ferrule, and also that part of the india rubber which comes "within the ferrule," should be dusted over with the dust of rosin to prevent the india rubber withdrawing.

[Printed, 6*d*. Drawing.]

A.D. 1854, June 3.—N° 1232.

FONTAINEMOREAU, Peter Armand Le Comte de.—(*A communication.*)—"Improvements in the construction of umbrellas "and parasols," that shall close within a small compass.

The handle of the umbrella is composed of four tubular pieces sliding one within the other; at the lower extremity of the tubes a guide is fixed which works in a slot in the tubes and directs them when they are drawn out, and fixes them by entering a notch at the extremity of each slot. By turning the handle the guide is disengaged from the notches, and the tubes composing the handle may be slid one within the other, thus reducing the length of the umbrella stick. The upper extremity of one of the tubes is fitted with a ring to which the branches are adjusted, each branch being composed of four metal joints; the upper joint is fastened to the second by an ordinary hinge, but the others are joined by an arrangement described, which allows them to move more freely. The covering is separate, and can be folded up and placed in a pocket book, into which the handle, branches, &c. also fit.

A modification of the invention is also given by which the joints of the branches supporting the covering are composed of oval tubes made to slide into each other. The forks are composed of two parts joined by a hinge which allows them to fold on each other.

[Printed, 1*s*. Drawings.]

A.D. 1854, August 30.—N° 1897.

MEYERS, Barnett.—(*A communication.*)—(*Provisional protection only.*)—" Improvements in walking-stick guns."

The invention relates to the construction of fire-arms in the form of walking sticks or canes, so that they may " be turned to " satisfactory account as guns or explosive contrivances." " The " main body of this walking-stick gun is bored or cleared out " truly from end to end, to form a traverse barrel for the discharger." The head of the cane has a handle, and the ground end a solid ferule when used as a stick. " The discharger is a " cylindrical piece of metal traversing freely within the band." The muzzle end has a short metal barrel or rifled muzzle piece, which is screwed out, when the piece has to be loaded, and the bullet is dropped in at the slightly wider end; a percussion cap with or without gunpowder is put in after the bullet, and the barrel piece so charged screwed in again. In front of the charge is a spring needle action like that in the Prussian needle gun. When the piece is to be fired the shooter blows from his mouth through a small hole in the head which expels the discharger with considerable momentum, until it strikes the spring needle action, and jerks it forward, so as to perforate the cap, which explodes the detonating substance. Instead of the discharge by the breath, the needle may be struck forward by a trigger.

[Printed, 4*d*. No Drawings.]

A.D. 1854, September 5.—N° 1940. (* *)

STOCKER, Samuel.—" Certain coverings for various parts of " the human body, with a view to the preservation of health."

Amongst these, the inventor claims the "attaching to the "circumference of an umbrella or parasol a circular veil or "curtain, having an aperture in front to see through." "In "lieu of attaching a curtain to the umbrella, the umbrella may "be made long enough to answer the same purposes as a curtain, "and the aperture for sight will then be made in the umbrella."

[Printed, 8*d*. Drawing.]

A.D. 1854, September 22.—N° 2045.

HOLLAND, Henry.—"Improvements in the manufacture of "umbrellas and parasols."

A method of strengthening umbrellas and parasols that are made with tubular ribs of steel. A piece of steel wire is inserted into the tube at the point where it is to be indented to receive the stretcher joint; the substance of the tube when softened for indentation is forced down upon the wire, and the part becomes almost solid. The second part of the invention consists of a method of making tubular stretchers so as to obtain thereon forks for attachment to the ribs similar to those obtained when solid wire is used. A piece of charcoal iron wire, about an inch long, is inserted into the end of the tube and this piece of iron then slit up in the usual way, the wire and tube being slit at once. The split is afterwards opened and shaped, each prong being a combination of iron and steel.

[Printed, 6*d*. Drawing.]

A.D. 1854, September 30.—N° 2102.

BOYLE, Arthur.—"Improvements in making umbrella and "parasol stretchers."

A machine for making stretchers for parasols instead of performing the several processes by hand and separate tools. The wire is drawn into the machine by nippers, flattened as drawn in by pressure between flattening tools, and then moved forward and cut to the required length; the end of the incoming wire is split by tools, then shaped to into a fork, flattened by tools, and the forked points punched. All the operations take place simultaneously on different pieces of wire.

[Printed, 2*s*. Drawings.]

A.D. 1854, November 28.—Nº 2503.

RESTELL, THOMAS.—" Improvements in umbrellas, parasols,
" and cases or covers, and walking sticks."

Umbrellas and parasols are constructed to open and close in the reverse manner to those commonly employed; the runner being pulled down to open and pushed up to close them. The runner is notched or cut out to receive the ends of the stretchers; the central part is tubular and slides over the stick; it has a slot for bearing the spring catch. The bottom of the runner has a ring with parts hollowed out to receive the ribs when shut.

Walking sticks and cases and covers of walking stick umbrellas are formed of a mixture of paper, calico, linen, and other fabrics. The cases are formed into tubes over a mandril under pressure, the sticks by covering a core of wood or cane with the material. They are then japanned and coloured as desired.

[Printed, 1*s*. 2*d*. Drawings.]

1855.

A.D. 1855, January 25.—Nº 187.

SAMUEL, BARNETT.—" Improvements in the manufacture of
" knife handles, umbrella and stick handles, door knobs, articles
" of furniture, and other articles, having the appearance and
" transparency of solid tortoiseshell."

These articles are made of horn with an exterior coating of tortoiseshell united to it by heat and pressure. The horn is pressed by a screw press into the mould or die to give it the desired shape and form; it is then surrounded by two or more pieces of tortoiseshell placed in heated moulds, to which the pressure is applied, or pieces of horn are selected and pressed into the moulds in the usual way and the surface is cleaned with a sharp tool. Some thin plates of shell from the hoof of the tortoise are then well boiled and cleaned and the horn encased in it and pressed in heated pressing tongs or moulds. Thus the horn and shell are caused to adhere. Thin plates of tortoiseshell are then placed on the article and the process repeated. The addition of the shell hoof improves the colour and appearance.

[Printed, 4*d*. No Drawings.]

A.D. 1855, February 17.—N° 359. (* *)

HACKETT, John.—(*Letters Patent void for want of Final Specification.*) — " A new and improved fabric or fabrics for the " manufacture of umbrellas, parasols, and buttons, and for other " purposes."

" The fabrics I use," says the patentee, " and which I claim, " are, first, one fabric composed of at least two-thirds of the warp " threads and at least two-thirds of the weft threads of doubled " and twisted two-thread cotton.

" Secondly, I use at least two-thirds of the warp threads of " doubled and twisted cotton, and two-thirds of the weft threads " of doubled and twisted worsted, or I use the same, alternating " each.

" Thirdly, I use at least two-thirds of the warp threads of " doubled and twisted cotton, and at least two-thirds of the weft " threads of doubled and twisted mohair, or I use the same " materials, alternating each.

" Fourthly, I use at least two-thirds of the warp threads, and at " least two-thirds of the weft threads of doubled and twisted " mohair, or I use at least two-thirds of the warp threads, and at " least two-thirds of the weft threads, of doubled and twisted " worsted."

[Printed, 4*d*. No Drawings.]

A.D. 1855, March 24.—N° 647.

WILLIS, James. — " Improvements in certain parts of the " frames and furniture of umbrellas and parasols."

1. Instead of casting the top notches and runners they are made of drawn or rolled sheet metal. 2. The runner is made conical with a shoulder at the top to prevent the end of the stretchers tearing the cover. 3. The top notch also has a shoulder for the same purpose. Glass heads are secured to the end of the ribs by cement for ornament. Sometimes the glass tips may be blown upon split tubes, and the tube tips fixed to the ribs with cement.

[Printed, 8*d*. Drawing.]

A.D. 1855, April 2.—N° 735. (* *)

FRIEND, George William.—" Improvements in umbrellas & " parasols."

The invention consists in " coating steel ribs of umbrellas " and parasols with other metals," to prevent " corrosion from " the action of the atmosphere and wet," and to enhance " the " appearance of the umbrella."

The steel ribs may be coated with metal " by the ordinary " process of tube drawing," but it is preferred to apply the " coating by electrical deposition."

In the Provisional Specification it is proposed to cover the ribs (either of steel or whalebone) and also the " stretchers of " umbrellas and parasols by drawing metal tubes thereon," and to " apply a coating of gutta percha to the ribs and stretchers of " umbrellas and parasols."

Silver and gold are preferred to be deposited by " the galvanic " battery." " In this case the ribs are in a comparatively finished " state before applying the coating," and a coating of copper is first applied, then " a coating of silver or gold;" or the ribs may be tinned " by the ordinary process of tinning," and subsequently coated with " copper and silver by electrical deposit."

The electro-coppering is preferred to be performed by means of a " cyanide solution."

[Printed, 4*d*. No Drawings.]

A.D. 1855, April 19.—N° 875. (* *)

JOHNSON, John Henry.—(*A communication.*)—" Improve- " ments in the manufacture of articles of hard india-rubber or " gutta percha, or compounds thereof, and in coating or covering " articles with the like materials." Among the articles proposed to be made of the above materials are handles for canes and umbrellas.

Respecting the preparation of the materials and the mode of moulding reference is made to the Specifications of T. Hancock, A.D, 1843, N° 9952; T. Hancock, A.D. 1846, N° 11,135; C. Hancock, A.D. 1846, N° 11,032; Brockeden and Hancock, A.D. 1846, N° 11,455; W. Johnson, A.D. 1854, N° 1819; J. H. Johnson, A.D. 1854, N° 752; J. H. Johnson, A.D. 1855, N° 506; and J. H. Johnson, A.D. 1855, N° 855. The articles are first moulded when in a soft state, and then submitted to a high degree of heat in steam heaters, or to the action of a sulphur bath. "In some cases it is proposed to form the article of the "compound in a plastic state, and then submit it to the action "of heat after being removed from the mould, or the article "may be submitted to the heating process while still in the "mould. During the process of vulcanizing, the article may "be embedded in magnesia, which is preferable to soapstone or "plaster, since these materials bleach the articles during the "process of vulcanization, whilst the magnesia allows them to "come out of the mould quite black."

[Printed, 4*d*. No Drawings.]

A.D. 1855, May 4.—N° 996.

THIERS, RODOLPHE.—"A machine for manufacturing stretchers "of umbrellas and parasols."

"The present machine is so constructed as to seize the iron "wire at the bundle or coil, straighten, cut, and fork it by a series "of successive operations gone through in one revolution of the "wheel of the engine."

A carriage, having a holder to alternately seize and loose the wire, is moved backwards. To this carriage the wire passes through draw plates and rollers to straighten it, and is conveyed by it between two headstocks, separated by a distance corresponding to the length of the stretcher. A plier now seizes and bends the end of the wire, and shears split it. The other end of the wire is then cut, and the forked end pressed against a die which gives the required shape to the branches of the fork.

[Printed, 10*d*. Drawing.]

A.D. 1855, June 29.—N° 1487.

BROADBENT, JOHN, and YOULE, STANLEY PETER.—(*Letters Patent void for want of Final Specification.*)—"Improvements in machinery or apparatus for cutting out the gores of "umbrellas and parasols, which said improvements are also "applicable to cutting out forms and shapes for other purposes."

This invention is for cutting out gores and other shapes, by cutting edges or blades fixed upon the outer surface of a roller; another roller forms a bed or surface for the knives or blades to cut upon or against. A rotatory motion being imparted to the roller furnished with the blades, one or more gores or shapes will be cut out at every revolution of the roller.

[Printed, 4*d*. No Drawings.]

A.D. 1855, August 18.—N° 1874.

SANGSTER, William.—"An improvement in the manufacture "of umbrellas and parasols."

This improvement consists in weaving the covering of an umbrella in one piece and without a seam, of silk or alpaca or other fibre. "The fabrics are warp or loop-formed fabrics, "manufactured in such manner as to be elastic in all directions," and having "a cord or non-elastic edge" formed at the circumference of the covering. The linings of parasols are also made in one piece instead of in several sections as before.

[Printed, 4*d*. No Drawings.]

A.D. 1855, August 28.—N° 1949.

BROOMAN, Richard Archibald.—(*A communication.*)—"Improvements in umbrellas."

This invention relates to the construction of folding umbrellas which "shall have as great a degree of stiffnes and strength when "expanded for use as can be obtained in the ordinary umbrella."

The staff is formed of three pieces, the middle one hollow. The three pieces are connected by swivels, and have screws upon their ends, by which they may be joined so as to form one piece. The ribs are each in two pieces, and are secured to the top of the staff and distended by stretchers of the common construction; the two parts of the rib are connected by a rule joint, to allow of the one part being folded back on the other. On the inner part of the hinge on the rib is a flat spring, which gives additional stiffness to the rib when extended. The hinge joint is prevented from wearing through the silk by a piece of leather. The umbrella may either be closed in the usual way, or the ribs may be doubled back and the stick unscrewed and folded into three parts.

[Printed, 8*d*. Drawing.]

A.D. 1855, September 18.—N° 2111.

WILLIS, James.—"Improvements in the construction of "umbrella and parasol furniture."

To form that part of "top notches" or runers in which the ribs and stretchers are inserted, "drawn or other tube or strips of metal "bent into the form of a trough or unclosed tube" are used. These pieces of hollow metal are formed into rings and fixed on the body of the top notch or runner; the radial cuts are then made in the rings for the reception of the ends of the stretchers or ribs; and an opening is left for the wire. When a ring is formed of sheet metal it is bent round a mandril, the ends are brought near together and brazed to the tube which is to form a top notch. When solid rods of drawn or rolled metal are used instead of hollow or trough-like metal the same method is employed, and the ring is flattened where it comes in connection with the main tube. The rings are then cut in a lathe to form the grooves. The rings on the tubes are then notched by saw cuts to complete the top notches. In place of the ordinary twisted wire for attaching the ribs or stretchers of an umbrella, the ribs or stretchers are strung on a piece of steel bent into the form of a ring and made to fit in a groove of the runner or top notch; the sides of the groove may be bent over the wire, or the ends of the wire ring may protrude out of the groove on the periphery of the ring and be twisted.

[Printed, 6*d.* Drawing.]

A.D. 1855, December 11.—N° 2802.

FOROT, Alexandre.—"Improvements in parasols."

These consist in arranging a parasol so that it will fold into the form of a fan.

A plate of metal is attached to the end of the parasol stick. On the two sides of this plate are two other plates connected by hinges. "To these latter plates the ribs are attached by joints "which only allow them to move in the plane of the plate." One half of the number of ribs are attached to each plate. The stick is jointed in the usual manner to double up, and fold between the two sides of the parasol. The handle is jointed to fold out of sight when the parasol has the form of a fan.

[Printed, 6*d.* Drawing.]

A.D. 1855, December 29.—N° 2945.

BROADBENT, John, and YOULE, Stanley Peter.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for cutting out the gores of umbrellas & parasols."

The cutting blades are fixed on the outer surface of a roller; another roller forms a bed or surface for the blades to cut against, a rotary motion being given to the bladed roller. A number of gores will be cut out at each of its revolutions.

[Printed, 4*d*. No Drawings.]

1856.

A.D. 1856, February 23.—N° 471.

SANGSTER, WILLIAM.—" An improvement in the manufacture " of umbrellas and parasols."

This improvement consists in making covers for umbrellas in one piece, out of " ordinary or straight-down warp fabrics, wherein " the warps simply loop into each other, and proceed lengthwise of the fabrics without traversing from selvage to selvage." A cord between the ends of the ribs restrains the elasticity.

[Printed, 4*d*. No Drawings.]

A.D. 1856, March 19.—N° 656.

COHEN, BARNET SOLOMON.—(*Provisional protection only.*)— " An improvement in the manufacture of penholders, handles, " knobs, finger plates, and umbrella and parasol furniture," by applying fuller's earth in the process. "The fuller's earth is ground with water and rendered into a plastic state, and when desired is mixed with coloring or other matters to produce different effects; and the same is then moulded or formed by pressure in " or by moulds or dies. The articles are then fired or burnt in " kilns or ovens."

[Printed, 4*d*. No Drawings.]

A.D. 1856, June 17.—N° 1425.

HOLLAND, HENRY.—" Improvements in the manufacture of " umbrellas and parasols."

This invention consists in the methods of making the stretcher joints of steel umbrella and parasol ribs, and making the forks of steel tubular stretchers. The strip of steel of which the rib is to be made with the seam or joint inside, is to be reduced in thickness in all parts excepting that from which the joint is to be made, and afterwards that part is to be expanded laterally by pressure, and the whole formed into a tube, excepting that part from which the joint is to be made, which is to be folded into two parallel portions to form the stretcher joint.

To make a solid wire rib with a "self-joint," a piece of annealed steel wire is thickened up at that part which is to form the stretcher joint, upon the principle upon which "wood screws are " headed," " or by rolling wire in rolls laterally grooved."

A second part of the invention consists of a method of making the forks of tubular stretchers. A strip of sheet metal is folded, and the double part slit, so that when the steel is rolled into a tube a fork is formed; or the steel may be rolled in grooved rolls.

[Printed, 8*d*. Drawing.]

A.D. 1856, July 1.—N° 1542.

DAVIES, John Lacey, junior, and BROADBENT, John.—" Certain improvements in umbrellas and parasols."

These improvements relate chiefly to those umbrellas having paragon or other metallic frames, but also to those in which whalebone, cane, wood, metal, ivory, or hardened india-rubber is used. The upright stick of the umbrella has in its exterior surface a number of grooves or flutes in a direction from end to end of the stem or stick, corresponding with the number of the ribs or rods, and into these grooves the " distending arms " and " ribs " of the umbrella fall when the umbrella is closed; they are also secured at the top notch near the top of the stick with wire passing through them, and round a " wheel top " or " top notch," the collars of which may project inward instead of outward, so that the ends of the ribs will be retained each at the bottom of its groove. The slide or runner that elevates the stretcher is formed "having a joint in each groove, that the end of each " of the ribs and rods, and their stretchers, being attached to the " 'runner,' will be held down to the bottom of their respective " grooves or channels."

[Printed, 10*d*. Drawing.]

A.D. 1856, July 11.—N° 1638. (* *)

HARRINGTON, Robert.—" Improvements in umbrellas, para-" sols, walking sticks, whips, &c." This invention relates to bending metal tubes (by preference of brazed iron) " into hooks or " handles suitable for fitting on to the ends of the tubes or sticks " of umbrellas, parasols, walking sticks, and other similar " articles, and in afterwards japanning or otherwise coating and " ornamenting them." An upper and a lower die are employed; the lower consists of two parallel cheeks " placed sufficiently apart " to allow of the tube to be bent passing between them; at one end of the opening between the cheeks is a shelf, " up to the end " of which the length of tube is fed; at the other end is a friction " wheel," " which turns to allow the tube to pass freely over it " while bending." The lower part of the upper die " corresponds " in form to the inner side of the bend to be produced." " When " the length of tube has been bent, its end is cut off at a suitable " angle, and the opening is stopped with a composition of glue " and whiting, prepared by mixing whiting with strong glue until " a plastic mass is produced." Sometimes, instead of " japanning " directly on to the metal," it is first covered with paper, by which means the hook or handle is rendered " more pleasant to the " touch," and the japan less liable to crack.

[Printed, 10*d*. Drawings.]

A.D. 1856, August 1.—N° 1818.

TOLHAUSEN, Alexandre.—(*A communication from Louis Amand Mangin.*)—" A new and improved flexible pocket umbrella, " being likewise applicable to common and other sticks, canes, " etc."

This umbrella may be shut up into a third of its length. The ribs are fixed together at the top in the usual way, by a wire passing through the end of each rib, and round a groove in the collar, the two ends being twisted together. The ends of the stretchers are also fixed in the ordinary manner, Each rib is divided into two segments, which are joined by a double hinge-joint working on pivots. On one of the segments is placed a spiral spring which acts on a tube, and forces it over the joint. When stretched out the two segments are placed in a line with each other.

The handle is formed of a number of tubes sliding within one another, or of a hollow cane cut into sections threaded on a string.

A common stick or a horse-whip may be used for a handle.

[Printed, 6*d*. Drawing.]

A.D. 1856, November 19.—Nº 2741.

FOX, Samuel.—"Improvements in heating steel wire and tubes, " also ribs and stretchers of umbrellas and parasols, for harden- " ing, and in apparatus for straightening wires and tubes."

The articles, such as ribs and stretchers, to be heated, are placed in iron cylinders which have rings or projections. The furnace has a door at each end, and is heated by a fire at one end, the chimney and flue being at the opposite end. The heat and flame are reverberated from the roof down upon the bed, which has channels from end to end, on the upper surfaces of which the cylinders are rolled progressively from the front to the back end, where they are taken out, re-charged, and re-introduced at the front end of the furnace. To straighten heated wires, a number are placed on rings that rest on two rollers, which are made to revolve; the wires and tubes are prevented from moving longitudinally, and are pressed on by rollers carried by a lever frame, the axis of which receives motion from the shaft of the machine.

[Printed, 1*s*. Drawing.]

A.D. 1856, November 21.—Nº 2760.

ROTHENHEIM, Sigmund. — (*Provisional protection only.*)— " An improved walking stick pipe."

By this invention canes or walking sticks are converted into tubes for tobacco pipes. The mouthpiece is fitted to the thin end of the cane, and the ferule, which is hollow to receive the mouthpiece, screws off and on to protect it when the stick is used for walking. The knob is hollowed out to form the bowl, and is lined with metal or clay. The cap of the bowl has a hinged lid. The knob or handle may be of meerschaum, and the knobs are formed to receive a small stock of lucifer matches for lighting the pipe, or for snuff. The inside of the tube or stem is lined with clay or caoutchouc. The knob or bowl has also a short stem with or without a mouthpiece, and the inside of the cane is enlarged to receive it. By this means the walking stick may be used as one long pipe, or the top being removed it may be used as a short pipe, whilst by screwing on a cap the long stem may be used as a walking stick.

[Printed, 4*d*. No Drawings.]

A.D. 1856, December 10.—Nº 2929.

SMITH, THOMAS.—(*Provisional protection only.*)—" An improved " joint for folding handles or sticks of umbrellas and parasols."

The " invention consists in fitting a bayonet joint to sticks of " umbrellas in combination with the ordinary folding joint." On the bottom end of the upper part of the stick is " a tube with " two slots, one longitudinal and the other transverse, and opening into one another." To the top of the bottom part of the stick an ordinary parasol joint is fixed, the top of the folding joint is placed in the tube, and a pin or stud fitted thereto " through " the lower end of the longitudinal slot in the tube." If the handle is to be folded, the " joint is pushed up into the tube, " and when the pin has reached the top of the longitudinal slot " it is turned, and the pin thereby pushed into the transverse " slot."

[Printed, 4*d*. No Drawings.]

1857.

A.D. 1857, January 22.—Nº 193. (* *)

RUBERY, JOHN.—" Improvements in runners, top notches, and " other parts of umbrellas and parasols."

Malleable cast iron is used " in place of the metals heretofore " employed;" and the articles " are cast and annealed, and are " shaped, cut, and finished to the forms desired as when using " brass for such articles." " The notches of runners and the " top notches of umbrellas and parasols " are made from " two " somewhat hollow or dished discs of sheet iron or steel."

This invention further " consists in finishing the runners, the " *top notches*, and other parts of the furniture of umbrellas and

" parasols when not of brass by coating them with brass by the " electrotype process." For this purpose " they are thoroughly " cleansed by pickling and scouring with sand; they are then " placed in the depositing bath, and brass is deposited on them to " the desired thickness in the ordinary way."

[Printed, 6*d*. Drawing.]

A.D. 1857, February 10.—N° 383.

MORGAN, Jabez.—(*Provisional protection only.*)—" Improvements in the manufacture of steel and iron wire for umbrella " and parasol frames."

The sectional form of the wire is somewhat like the letter T, and it may be modified " by making it not quite so angular, or " connecting the extreme top of the T to the base on each side " with an inward curve instead of an inward angle."

The wire may be either drawn or rolled, but it is preferred to manufacture it partially by drawing, and partially by rolling.

[Printed, 4*d*. No Drawings.]

A.D. 1857, February 17.—N° 461.

BENNETT, John.—(*Provisional protection only.*)—" A new or " improved joint for fishing rods, the rods or handles of parasols, " and for other rods."

Upon the ends of the rods to be attached is a metallic rule or ferule, the tube on one rod entering and sliding in the tube on the other rod. The larger tube has in its axis a smaller one, so that the tube entering the larger tube slides in the annular space between the tubes. The two tubes are joined by a cylinder of india-rubber, which acts as a joint, permitting the two rods to lie parallel to each other. The smaller tube has a bayonet joint in which a pin engages.

[Printed, 4*d*. No Drawings.]

A.D. 1857, February 24.—N° 542.

PULLAR, John, and PULLAR, Laurence.—(*Provisional protection only.*)—" An improvement in the manufacture of umbrellas " and parasols."

The invention consists in the application of a fabric formed of "weft of spun silk waste and warp of cotton or linen yarn." The weft used "is of single yarn produced from dressed or "heckled silk waste dyed by preference in the hank sliver or "rove. The warps are of cotton or linen yarn, by preference "doubled, or what is called lace cotton suitably dyed." These warp yarns are passed through a solution of aluminous soap. The projecting fibres are singed off, and the fabric is then put into a dash wheel, next passed through a solution of gum, and over rollers placed above a charcoal fire; after this the fabric remains exposed to the atmosphere, and is passed through hot rollers to obtain lustre. The fabric may be woven with a pattern.

[Printed, 4*d*. No Drawings.]

A.D. 1857, March 5.—N° 644.

HOLLAND, WILLIAM.—"A new or improved manufacture of "runner notches and top notches for umbrellas and parasols."

In making runners and top notches a circular disc of sheet iron is raised into a cup-like form by dies and pressure; then the mouth of the cup is contracted by pressing tools. The cup is next placed on a mandril set in a lathe having a rotary motion, the diameter of the mandril being less than that of the cup, so that the cup can be easily removed. This mandril has a groove near its end, "into which by a pressing tool applied outside" is forced "a part of the said cap." The cup is then operated upon by a series of dies, by which it is brought into the required figure, the metal being annealed during the pressing process. Notches are cut by circular saws across the groove, and a top notch is produced; and by soldering a tube on the notch it is converted into a "top notch" or "runner notch."

[Printed, 6*d*. Drawing.]

A.D. 1857, April 3.—N° 924.

HOLLAND, WILLIAM.—(*Provisional protection only.*)—"A new "or improved manufacture of runner notches and top notches for "umbrellas and parasols."

In making runners or top notches, wire or strips of sheet metal is used which has been bent into a trough-like form, or resembling *the letter U*. This strip or wire is coiled upon a mandril so as to form a compact helical or cork screw-like coil, the open or trough side being turned outwards in coiling; the coil is then so cut as to divide each turn of it transversely, and thereby make a series of rings, the ends of which are brought together and joined by soldering. The trough-like form of the ring forms the groove in which the wire or axis of the joints lies. The notches are formed by a press or saw; when used for a runner notch a tube is soldered to the notch. M shaped strips of metal may also be used.

[Printed, 4*d*. No Drawings.]

A.D. 1857, April 14.—N° 1051.

RUBERY, JOHN.—"Improvements in the manufacture of "umbrella and parasol ribs."

By this invention parasol ribs are made by dies which form at one time the knob and flat part near the knob at the end of one rib, and the flat part at the top notch of another rib. The wire is fed between these dies in a continuous length, and the ribs as formed by the dies are so far separated that they may easily be broken apart by hand. By other dies an indentation is made in the middle of the rib to receive the bit to which the stretcher is jointed. Several lengths of wire may by suitable dies be made into stretchers at the same time.

[Printed, 8*d*. Drawing.]

A.D. 1857, May 22.—N° 1450.

FOX, SAMUEL.—"An improvement in the manufacture of flat "steel wire used for the manufacture of the ribs and stretchers "of umbrellas and parasols."

In place of continuing to draw the flat steel wire to the desired degree of thinness, it is drawn through dies to nearly the required section, and being then annealed is completed by being passed one or more times through hard and smooth rolls. By this process "less waste takes place when bending such wire into" the "hollow or trough-like form" required.

[Printed, 4*d*. No Drawings.]

A.D. 1857, May 27.—N° 1490.

HOLLAND, WILLIAM.—"Improvements in umbrellas and "parasols."

1st. The form used in the manufacture of ribs and stretchers resembles in section two sides of an equilateral triangle; the edges of the sheet are turned outward or inward to give strength, and there may be a concavity on each side. The ends of the ribs or stretchers may be finished by flattening, rounding, and piercing or putting on tips in the common manner. The "middle bit" or stretcher joint is made of a piece of sheet metal doubled, the bit is then slid on the rib and secured. The middle bit may be formed and attached to the rib in any convenient manner.

2nd. To make top notches and runner notches, welded or soldered iron tube is cut into rings, which are operated upon by dies so as to make their sides grooved, "or of a section resemb-" ling the letter **U**." This forms a top notch. A runner notch is made by affixing a tube thereto.

[Printed, 6*d*. Drawing.]

A.D. 1857, June 12.—N° 1647.

RUTTER, Thomas, and BANISTER, James.—(*Provisional protection only.*)—"Improvements in umbrellas and parasols."

The rods of the umbrellas, and the runners sliding on them, are made of an octagonal cross section instead of cylindrical; so that the runner cannot turn upon the rod, and strain upon their joints is evaded. Any angular profile which will prevent the rotation of the runner on the rod may be used.

Secondly, solid ends are attached to hollow metallic umbrella rods by brazing and soldering, instead of by partly inserting them into the ends of the rods, and fixing them by passing a pin or rivet.

[Printed, 4*d*. No Drawings.]

A.D. 1857, June 20.—N° 1726.

FOX, Samuel. — "Improvements in the manufacture of um-" brellas and parasols."

This invention has for its object the improvement of the method of forming the "bit" or piece fixed on the rib to attach it to the stretcher. "Before the rough bit is put into the forming dies it" is struck on its end by an additional pair of dies, which bring it" to such a form that it lays well within the engraved portion of" the forming dies, and when these come together they expand it" to the exact form without producing a burr." In drilling the hole in the bit that is to receive the pin of the stretcher, it is more convenient to use a vertical than a horizontal drill. To cause the descent of the drill spindle a treadle may be connected to a lever and spring which will raise the drill up again when the foot of the workman is removed from the treadles. Instead of employing the spring to lift the drill, it may be made to press it up to its work, and then the pressure on the treadle will lift up the drill when its work was done.

The invention also deals with the construction of the catches of umbrellas when the tubes are formed of metal. When wire catches are used, the tube has no slit cut in it as heretofore, but is indented so as to form a depression for receiving the catch when pressed down; the catch is fixed by passing it through a perforation in the side of the tube at one end of the indentation, and is riveted from the outside; the other end of the catch is passed into the interior of the tube at the other end of the indentation, and is turned inside to prevent its springing back; the catch sometimes has a notch to receive the spring.

When solid catches are used, springs of bent wire are "thrust " into the tube " with a " looped end " which " drops into a notch " on the under side of the solid catch."

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1857, August 4.—N° 2114.

NEWTON, Alfred Vincent. — (*A communication from Mardochée Lévy and François Henry Blajot.*)—(*Provisional protection only.*)—" Improvements in umbrellas and parasols."

The " object of this invention is to neutralize the effect of the " wind on umbrellas when in use, and also to render less power " requisite to hold them up." For this purpose the stem near the handle is made of a smaller diameter than the other part of the stick, and it is inserted in a tube in which it can revolve freely. This tube " it is preferred to make of a poiygonal form," so that when the umbrella is held by the polygonal tube its head, on coming into contact with any object, will turn on its axis.

Also, small solid or hollow knots of a spherical or other form are fixed " to the extremities of the several whalebones or ribs of " umbrellas instead of the ordinary points," which turn on their axes, " and thus still further diminish the resistance on the " umbrella coming into contact with a wall, or other obstacle."

[Printed, 4*d.* No Drawings.]

A.D. 1857, August 5.—N° 2119.

FIELD, THOMAS.—(*Provisional protection only.*)—" Effecting " improvements in parasols and umbrellas."

The upper half of the parasol stick, to which the top notches are attached, is made of a diameter sufficiently large to admit of the other half of the stick being pushed into it. A cap is screwed on the lower end of the outer half of the parasol stick, and a small shoulder formed to prevent the lower half of the stick being drawn out of the upper part. A helical spring is coiled round the outside of the stick between the top notches and runner notches, to which it is attached; this spring tends to close and keep closed the umbrella. The spring catch or locking spring is removed that the helical spring may act freely up and down the stick. A small hole is made in the upper part of the stick, and a corresponding one in the tube to which the runner notches are attached, to which is fixed a small spring and a light locker; when the runner is pushed up to spread the parasol, the arm of the locker is forced by the spring through the hole in the tube, and into the hole in the upper half of the stick, holding the arm extended; a sunken band of caoutchouc is used to make the lower half of the parasol stick work firmly in the upper half.

In constructing gig umbrellas " an extra locker and small " spring is placed near the lower end of the uper half of the " umbrella stick, for the purpose of holding the uper and lower " halves of the umbrella stick in an entended condition."

[Printed, 6*d*. Drawing.]

A.D. 1857, September 3.—N° 2305.

HOLLAND, THOMAS, and RUBERY, JOHN.—(*Provisional protection only.*)—" Improvements in the mode of manufacturing " the runners and top notches of umbrellas and parasols."

These consist in forming from sheet iron of sufficient thickness that part of the runners to which the stretchers are attached, and making the top notches, to which the ribs are attached in the following way, from sheet iron, or other metal. Discs are cut of a proper size, and in the centre of each disc a hole is cut of the size of the barrels of the runners and notches. These rings are soldered to the barrels, and finished " by grooving and notching " in the usual form."

[Printed, 4*d*. No Drawings.]

A.D. 1857, October 5.—N° 2545.

RUBERY, John.—" Improvements in the manufacture of cer-" tain parts of umbrella and parasol furniture."

These consist and relate to all parts of umbrellas and parasols that may be raised or formed from sheet iron or metal, " as ferrule " caps, top tips, globe tips, ferrule knobs or tips, tube plugs, open " caps, joints for ribs, and such like articles." All these articles are produced by a machine.

The proper tools are fitted on to a " fixed bed and top bolt, " working through guide rods," " the centre bolt or bar, to which " the top tool or tools are fixed, to be connected at the top to a " crank or an excentric, on the axis of which are fixed a fast and " loose pulley " or a fly wheel, by which the power is applied. Feeding " apparati " are also attached.

[Printed, 10*d.* Drawing.]

A.D. 1857, November 30.—N° 2981.

SOLOMON, Simon. — (*Provisional protection only.*) —" Im-" provements in umbrella, parasol, and walking sticks or canes."

The crook forming the handle is made by building up a series of parts on a piece of metal of the required form, and secured into the straight part of the stick.

In this invention short pieces of the cane itself are mounted on the metal foundation, which has knobs or joints imitated thereon; the end piece is glued and screwed into the straight part of the stem, and this retains the whole stick firmly together.

[Printed, 4*d.* No Drawings.]

A.D. 1857, December 4.—N° 3009.

RUBERY, John.—" Improvements in the manufacture of um-" brella and parasols."

The invention consists first in manufacturing the tubular slides for such umbrellas and parasols as are made with jointed handles by raising the slides from discs of sheet metal by dies and pressure. A " disc of sheet brass or other suitable metal or alloy " is operated upon by means of dies or tools " such as are commonly " used for raising metals," whereby it is caused to assume a " cup-like form," and afterwards contracted in diameter, and elongated " until it assumes the form of a taper tube closed at its " narrow end." " The said taper tube being of the form and

" size suitable for an umbrella or parasol joint slide," the closed end is cut off and the wide end trimmed and made smooth. Sometimes the patentee effects the raising of the slide by drawing the disc through a succession of dies, and then operating upon the partially formed slide by a pair of raising dies.

Secondly, in machinery for making the barrels of runners for umbrellas and parasols. A cutter descending vertically cuts off a piece of sheet metal of the proper size. This piece falls into a hopper, by which it is delivered between two dies. A mandril carried by a slide advances and bends the metal into a trough-like form. The dies now close on the metal and the mandril, and complete the bending of the metal around the mandril. The edges of the metal, thus bent into a tubular form, are joined by soldering, and the barrel finished in any convenient manner.

Thirdly, in machinery for "cutting radial notches in the top " notches and runner notches of umbrellas and parasols." A series of circular saws rotate on an axis to which motion is communicated through pulleys. The top and runner notches are strung upon mandrils, which are carried by a table. The mandrils are all geared together by a series of toothed wheels, and by means of a handle a "simultaneous partial rotation" can be given to them. The frame which carries the mandrils has a "reciprocating sliding motion in a direction at right angles to the axis " of the rotating saws." Motion being communicated to the machine by means of the pulleys, the saws are made to rotate, while the table moves on slowly and carries the notches under and against the saws. A groove having been thus cut across the notches strung upon each mandril, a partial rotation is given to the mandrils, and when the table performs its return motion the saws make other grooves in the notches, and so on until the required number is obtained.

Fourthly, in a method of making rings for runners and slides of umbrellas and parasols. A ring of a trough-like form is placed on a runner, and fixed thereon in a lathe, as follows :—The runner is placed on a conical mandril and pressed upon it by a " centre" while it rotates. The ring and the end of the runner are expanded by the conical mandril; and a rotating tool being pressed against the ring, it is thus closed on the runner.

Fifthly, in machinery "for straightening tubes to be used in " the manufacture of umbrellas and parasols." This machinery consists of a frame, supported by and turning on hollow axes, and carrying a series of dies or tools which meet in pairs at the central line of the axes. While the frame is rotating rapidly, the tube to be straightened is introduced at the end of one of the axes, passed through the dies, and out at the end of the other axis. The tube, which is held firmly by the workman to prevent its rotating, is straightened by the dies.

Lastly, in making runners and top-notches "of unannealed "cast-iron."

[Printed, 8*d*. Drawing.]

1858.

A.D. 1858, January 6.—N° 19.

COCKER, THOMAS FILDES.—(*Provisional protection only.*)— "Improvements in the manufacture of wire applicable to um-"brellas and parasols."

Flanged wire, which has in the cross section a thin flat projection "on each side of the round, square, or angular thickness of "the wire," is used for umbrellas and parasols. The wire is made out of round or square wire passed through grooved rollers, and drawn through apertures in a wire-drawing plate, or through adjustable steel cutters to remove inequalities in the flange. The wire is also used in hoops and stiffeners for ladies' dresses, and in stays.

[Printed, 4*d*. No Drawings.]

A.D. 1858, February 4.—N° 211.

GOODMAN, JULIUS, and GOODMAN, LOUIS.—(*Provisional protection only.*)—"An improved portable umbrella."

"The sticks or handles are made in two or more parts, and to "slide one within the other," as in telescope tubes; the ribs are made in two parts divided near the centre, having "a hook and "eye so that on opening the umbrella and drawing out the tele-"scopic handle, the hook takes into the eye," and the joint resists pressure as if it were a solid rib. To open the umbrella the runner is drawn downwards. "The umbrella being closed, it has merely "to be held with the point downwards, when the ribs being "simultaneously unhooked fall in an outward direction. The

" cover folding with the ribs makes the umbrella exactly one-half
" the length it otherwise would be, and enables the person carry-
" ing it to place it in a pocket when not in use."

[Printed, 4*d*. No Drawings.]

A.D. 1858, March 12.—N° 496.

PORECKY, Alexander.—" Improvements in the manufacture " of the frames of umberellas and parasols."

The patentee says:—" In order to carry out my said invention " I make the ribs, and in certain cases the stretchers of the " frames of umbrellas and parasols, after the plan followed by " nature in things similar thereto, as for example, quills, the " branches of plants, etc., and in which the principles of " economy and of mechanics are manifest in addition to that " of ease. In accordance therefore with this principle I make " the ribs of umberellas and parasols out of thin strips of whale- " bone, or of lamina of other corneous matter, or of other suit- " able materials of about $\frac{1}{32}$nd or $\frac{11}{24}$th of an inch in thickness " and from $\frac{1}{4}$th to $\frac{3}{8}$ths of an inch in width, which matters or " materials I bend by any suitable process into round or eliptical " tubes, or some longitudinal section thereof, leaving the inner " or concave part unfilled like a swan or goose quill, or filling it " with a light matter like a porcupine quill, according to the " strength required.

" II. I also make the ribs of umberellas and parasols, whatever " their material may be, stronger or less supple towards the top " part or end to be joined to the notch than at the lower part, " by making it from the top downwards taper like a straw or " some longitudinal section thereof, or by making the top of the " rib of a given size (through a given portion of its length, say, " from $\frac{1}{3}$rd to $\frac{2}{5}$ths), so that such part shall be substantially or " mechanically stronger than the rest.

" In some cases also I make the ribs each of three parts, which " parts may, if desirable, be of different materials, as, for example, " cane and whalebone, brass, iron and steel, quills, and cane or " whalebone, or other suitable materials, the middle part, as a " rule, to be of a stronger material than the rest, and so made " as to form a connecting piece for the upper and lower parts " of the rib, and a joining part for the stretchers."

[Printed, 8*d*. Drawing.]

A.D. 1858, March 17.—N° 539.

VASSEROT, Charles Frédéric.—(*A communication from Elie Vivet and Joseph Floret.*)—(*Provisional protection only.*)—" Im-" provements in the treatment of horn, and in the application of " it when so treated, as a substitute for whalebone in the manu-" facture of umbrellas, parasols, and similar objects."

To give it the desired elasticity, the horn is sawn in the direction of its grain, soaked in water for a few days, and exposed to a fire until softened. It is then put into a bath of lukewarm water, and afterwards passed between two polished iron plates and heated to about 80° or 100°. The plates are lubricated with grease, and then subjected to a great pressure for about 10 minutes, which equalises the thickness of the horn. It is pressed a second time between two plates of very hard polished wood, where it cools and becomes straight. The horn is then planed and sawn to the required length and breadth.

[Printed, 4*d.* No Drawings.]

A.D. 1858, March 17.—N° 546.

EVANS, Thomas.—(*Provisional protection only.*)—" Improve-" ments applicable to the manufacture of parasols."

These improvements apply to that description of parasol made with silk or other material, and with ornamental borders. Instead of these borders being woven with the other part of the silk as usual, they are woven separately, and are sewed or secured to the edge of the gores or pieces of silk of which the parasols are made. Each parasol made from a " length " of silk may thus be provided with a different ornamental border.

[Printed, 4*d.* No Drawings.]

A.D. 1858, April 6.—N° 736.

BLANCHÉ, Bernard.—(*Provisional protection only.*)—" Using " Malacca and Manilla cane instead of whalebone " in the manufacture of umbrellas and stays. Strips of cane are obtained by dividing the cane into sections, which may be used in the natural state, or painted and varnished. The outer portion of the cane only may be used.

[Printed, 4*d.* No Drawings.]

A.D. 1858, April 8.—N° 757.

ROWLAND, George.—" Improvements in the manufacture of " artificial whalebone."

" The improvements relate to the production of an article in " imitation of whalebone from horn, by softening the horn under " the influence of steam, and then flattening or compressing by " rolling processes." The horn thus prepared " is cut into the " forms desired."

Having sawn the horn into proper sized pieces, they are scoured and cleaned by a circular rasp or other scraper; the pieces are then placed in a vessel hermetically closed, into which oil and water mixed together by means of carbonate of soda or potash have been introduced; a jet of steam at a pressure of 5 or 6 atmospheres is then introduced into the vessel; after a short time the horn becomes soft and supple, and ready to be rolled and flattened. To prevent the horn being affected by any sudden difference of temperature the rollers are hollow, and a continued jet of steam is introduced into them; uniformity of thickness being given by passing the horn one or more times between the rollers. The fibres of the horn are all parallel to the length of growth, and in consequence, when being rolled, they only become lengthened without being broken or destroyed, and retain all their elasticity and solidity. Ribs and other parts of umbrellas are cut out of the horn after it has been rolled to the proper size, and whilst it is soft and supple.

Horn treated according to this invention is also to be used for making walking sticks, riding whips, whip handles, &c.

[Printed, 8*d*. Drawing.]

A.D. 1858, May 10.—N° 1039.

VASSEROT, Charles Fréderic. — (*A communication from Pierre Theophile Trocard.*)—(*Provisional protection only.*)—" Improvements in the manufacture of umbrellas and parasols."

The invention has for its object the construction of an umbrella having the stick or handle out of its centre when the umbrella is open, in order that " the middle part of the umbrella may be " brought and held more conveniently over the head of the " person using it." This is effected by shortening the ribs on one side, or by making an arm or elbow on the handle.

[Printed, 4d. No Drawings.]

A.D. 1858, May 14.—Nº 1085.

COLGATE, JOHN.—(*Provisional protection only.*)—" A pipe case " handle for walking sticks, canes, riding whips, and umbrellas."

" A piece of ivory, bone, hardwood, or any hard substance " suitable, is turned in the form of a handle for walking sticks, " canes, riding whips, and umbrellas. The handle cut into two " parts and hollowed out the proper size that will admit the " bowl of a tobacco pipe. When hollowed the two parts are " attached by a hinge not observable under the handle, and " fasten (enclosing the pipe bowl) at the back of the handle with " a catch pin let in, so as to form a mounting." The stick or cane, &c. on which the handle is to be fixed to be bored to receive the stem of the pipe.

[Printed, 6*d*. Drawing.]

A.D. 1858, May 29.—Nº 1212.

ROCKETT, SAMUEL, and REYNOLDS, JOHN JAMES.—Improvements in the manufacture of umbrellas and parasols."

The object of this invention is to render an umbrella quite useless to any one but the owner.

This is effected by making the cap which fixes the framework and stick together, removeable by means of a screw, so that when it is taken away the umbrella will not open properly. The " upper catch on the stick " is improved by the introduction of a " band and spring to be used instead of the wire spring or catch " now employed to sustain the framework when the umbrella is " open."

[Printed, 6*d*. Drawing.]

A.D. 1858, June 8.—Nº 1286. (* *)

WAPPENSTEIN, RUDOPH.—" Manufacture of artificial whale" bone, applicable to umbrellas, parasols, stays, hats, bonnets, " reeds, crinolines, and other similar purposes."

The patentee says,—" I take the horns of animals, and cut " them spirally, either by hand or suitable machinery, to any " required breadth or dimensions; I then open or untwist the " said spiral so cut, and submit it to the necessary pressure to " flatten it, by which process I obtain a length of artificial whale" bone, varying with the size of the horn, and the width of the [illegible] to awnings and other [illegible]

[illegible]

A.D. 18[illegible]—N° [illegible]

[illegible] Thomas.—“Improvements in machinery for [illegible] certain portions of umbrellas and parasols.”

[illegible] in the following way:— [illegible] and the wire is [illegible] is drawn in [illegible] the wire is cut [illegible] pair of tools the other [illegible] This piece is then, [illegible] two sets of tools, one to [illegible] to fasten the forked or [illegible] secondly to two sets of tools, [illegible] to open and shape the [illegible] is delivered by the [illegible] making improves the ends of [illegible] forming only, and [illegible]

[illegible] of the usual V shape [illegible] and parasols, the tools are so formed [illegible] operation.

[illegible]

A.D. 1856, [illegible]—N° [illegible]

NEWTON, WILLIAM EDWARD.—(A communication.)—“Improvements in the construction of umbrellas and parasols.”

These improvements relate to the construction of the frames of umbrellas with wire, and consist “in forming the ribs with their “eyes of single pieces or lengths of wire.” The operation of making the ribs commences by coiling the wire so as to form a top hole or loop, by which the rib is attached to the “top ring,” that is fastened to the stick; the wire is then coiled again at the centre to form the middle hole, or eye, to which the stretcher is connected;

another hole or eye is formed near the top by coiling the wire at that part. The whole rib, thus formed, consists of one piece of wire, and all the openings, or eyes, of the rib, are formed without being under the necessity of flattening, drilling, or punching any part of it.

The advantages enumerated are:—

The loops have not a tendency to cut the thread that attaches the covering to the case, as holes produced by punching or drilling, and having sharp edges, do.

The improved ribs, not being flattened, are stronger than ribs on the common construction.

The notch loops are larger and have thicker wire.

The rib forms a coiled spring, and prevents "the catching of the " ribs" in opening the umbrella."

The construction is cheaper.

[Printed, 10*d*. Drawings.]

A.D. 1858, July 10.—N° 1553.

PORECKY, Alexander.—(*Provisional protection only.*)—"Im-" provements in the manufacture of certain articles of whalebone, " horn, tortoiseshell, and other corneous matters, or the artificial " imitations thereof."

" Walking sticks, whips, fishing rods, penholders, and similar " articles of a hollow or tubular form," are formed from these materials by being bent or pressed "into a plain, fluted, orna-" mental, flexible, or rigid tube." They may then be filled with a composition, or "left unfilled, thereby allowing their sliding over " one another like a telescope if desirable."

Busks for ladies' stays are made in a similar manner.

[Printed, 4*d*. No Drawings.]

A.D. 1858, July 20.—N° 1638.

WHEATLEY, George.—(*Provisional protection only.*)—" An " improvement in the ornamenting of sticks," "by applying to " them white varnish holding bronze powder," whether "applied " directly upon the stick, or upon a ground of any desired color " previously applied to the stick." "After the white 'bronze " 'varnish,'" the sticks receive a coat of ordinary varnish, "to " give lustre to and protect the bronze powder."

[Printed, 4*d*. No Drawings.]

A.D. 1858, July 21.—N° 1643. (* *)

HARDON, Edwin. — " An improved manufacture of woven " fabric for covering umbrellas and parasols."

The " invention consists in manufacturing fabrics for covering " umbrellas and parasols with a cotton warp and a spun silk weft, " or with cotton weft and spun silk warp. The fabrics, which " may be either plain, twilled, or figured, are woven to the usual " widths for being cut up into covers for umbrellas and parasols, " and the borders are or may be ornamented by silk or other " stripes or figures. When the fabric has been woven it is dyed " and finished by suitable processes to render it fit for use."

[Printed, 4*d.* No Drawings.]

A.D. 1858, August 10.—N° 1822.

MOSES, Montague.—" Improvements applicable to umbrella " and parasol sticks."

The object of the improvement is to give persons carrying an open umbrella or parasol a greater command over it during windy weather, or when its weight is increased by rain. For this purpose a stop piece or rest is applied to the central stick, against which the hand grasping the stick will bear. Another modification has a strap of leather with its ends securely fixed in the stick; by passing the hand between the stick and strap, and grasping the stick, the umbrella may be held more firmly without an increase of exertion. A third modification has a rest for the upper and lower part of the hand, which may be fitted with a vulcanised india-rubber or a coiled metallic spring.

[Printed, 10*d.* Drawing.]

A.D. 1858, August 23.—No. 1914.

BOYLE, Arthur.—" Improvements in the manufacture of cer- " tain parts of umbrellas and parasols, and in machinery employed " in the said manufacture."

1. Instead of making the runners of umbrellas from a rectangular sheet of metal bent up into a tubular form, and then soldered and brazed, the runners are made from a circular disc of sheet metal, which is formed by the use of a pair of dies like those that draw sheets of metal into a tubular form; by this process the disc is made into a tube closed at one end, which end being cut off, the runner is finished by attaching a notch thereto.

2. A machine for flattening and making the knobs at the end of the ribs. It consists essentially of three dies, two of them working in a line with each other, and closing upon and flattening the rib. While the rib is held between these two dies, a third, or "heading die," approaches in a line at right angles to that in which the flattening dies work, and the "heading die," by a series of blows "heads" or makes a knob on the end of the rib, of a larger or smaller size.

[Printed, 10*d*. Drawings.]

A.D. 1858, October 9.—N° 2252. (* *)

CROFTS, William.—"Improvements in the manufacture of " fabrics by bobbin net or twist lace machinery."

"The improvements relate, firstly, to so combining transverse " weft threads, working from selvage to selvage, with longitudinal " bobbin and warp threads in bobbin net or twist lace machinery, " that strips or stripes of lace or other weavings may be made " side by side longitudinally of the fabric." Such fabrics are also formed "with the meshes or open work longitudinally " thereof, and side by side, of different form or character, at " equal or different distances apart, capable of forming checks in " combination with transverse weaving threads, working from " selvage to selvage of the fabric." "Also the improvements " relate to forming fabric of the kind referred to with the pattern " or figure of a zig-zag or angular character, the pillars or meshes " being bent serpentine, zig-zig, or angular, by the bobbin and " warp threads forming such pillars or fabric whilst twisting with " each other." These improvements are described at length.

With reference to the subject of the present work the patentee states that "the fabrics made may be used for antimacassars, win- " dow curtains, blinds, table covers, shawls, scarfs, neckties, " parasol covers, bed curtains, toilet covers, or other trimmings, " or for any other suitable purpose."

[Printed, 4*d*. No Drawings.]

A.D. 1858, October 14.—N° 2288. (* *)

COWPER, Charles.—(*A communication from Gustavus Cuppers.*)—"Improvements in the manufacture of articles of " hard vulcanized india-rubber and gutta percha, and similar " gums." It is proposed to use " vulcanizable gums, either

" alone or mixed together," for the manufacture of articles of a considerable thickness, solid, and with a perfect surface. Mention is made of canes, umbrellas, clubs, &c. The gum is mixed with sulphur, and heated for from half-an-hour to three hours in a metal mould. The moulded article is then withdrawn from the mould, and where blisters or other imperfections appear, it is coated with a solution of the gum, and is again subjected to heat in the mould, in which it is tightly compressed. The operation, if requisite, may be repeated. Finally, the moulded article is completely hardened by being baked in a box without the mould.

[Printed, 4*d*. No Drawings.]

A.D. 1858, October 25.—N° 2377.

FOWKE, FRANCIS.—" Improvements in umbrellas and parasols." The stick is of metal or other suitable material, and in section has a cross-form producing four recesses, each of which receives two or more ribs and stretchers; or the stick may consist of a small tube with leaves or ribs projecting from it. The stretchers have a triangular section, and to enable them to pack close they project a little beyond the ends of the ribs when the umbrella is closed, and their ends are bent a little and attached to the runner " which " is also beyond or above the ends of the ribs." A sliding tube or case covers the runner and ends of the ribs, which are flattened at the joints, and the forks of the stretchers are very small, so that the joints may lie in the recesses of the stick.

A case or sheath of caoutchouc is made somewhat shorter than the umbrella, having a ferule at one end and a catch at the other; it is exended in length in putting it on, and becomes contracted in diameter so as to fit closely.

By a Disclaimer, dated September 30, 1859, the patentee gives up any claim to the peculiar invention of " triangular " stretchers."

[Printed, 4*d*. No Drawings.]

A.D. 1858, November 6.—N° 2480.

DE SAXE, JOHN. — (*A communication from Charles De Saxe.*)— (*Provisional protection not allowed.*)—" An improved folding joint " for the handles of parasols."

In this invention the handle of a parasol may be straightened *or folded, or locked* or unlocked by using one hand only. " Two

" open metal cylinders are hinged together, the knuckle allowing " them to fold over parallel to each other." One of the cylinders has a catch and the other a bolt with a projecting pin. " By " pressing the projecting pin to the right or left the bolt or latch " turns on its axis, and its slot slides over the catch, which it thus " locks or unlocks with great facility." The inventor designates his invention " the telegraph lock joint parasol."

[Printed, 4*d*. No Drawings.]

A.D. 1858, November 24.—N° 2667. (* *) .

HESS, Richard Henry.—" A new manufacture of articles, " parts of articles, parts of machinery, surfaces, and ornamental " works, from talc and other silicates of magnesia." Among the articles mentioned are stick and parasol handles. These substances are reduced to a state of powder, and then pressed into suitable moulds, colouring matter being added when required. " Other substances may also be added to the silicates, such as " kaolin, alumina, lime, carbonate of barytes and felspar, at the " option of the manufacturer." After being formed in the mould, the article is removed therefrom, and baked or fired. The addition of a small proportion of glass to the material before pressing it into the mould "assists the fusing operation."

[Printed, 4*d*. No Drawings.]

A.D. 1858, November 26.—N° 2687.

MEYERS, Michael.—" Improvements in parasols."

The ordinary parasol frame, of whatever design, is covered with two pieces, or two outside covers of different dimensions, the same to be lined, and the lining and covers made of linen, cotton, alpaca, cloth, or of any woven fabric except silk. " The rims of " the lining and covers are formed into falls, or flounces, of and " suitable design, having their edges pinked or cut into fancy " patterns." The parasol is also furnished " with an ornamental " bow, the edges of which are also pinked or cut."

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1858, December 11.—No. 2849.

ROLLASON, Alexander.—" Improvements in the manufac- " ture of waterproof tissues, and in applying such waterproof " material to woven fabrics."

To manufacture the tissue, collodion is mixed with vegetable oil, and Canada balsam or "other suitable kind of balsam or "gum" sometimes added. This solution is poured upon "smooth "plates of glass or metal" and evaporated. The film deposited is stript off. To waterproof fabrics, the fabric is laid on the "tissue "while the latter remains upon the plate," and, after pressure to express the air from between the fabic and tissue, they are allowed to dry, when the fabric and tissue may be removed in adhesion. Another piece of fabric may be attached in similar manner to the other side of the tissue.

Reference is made to this process in No. 945, A.D. 1859, where it is applied to waterproofing umbrella covers.

[Printed, *4d.* No Drawings.]

1859.

A.D. 1859, January 10.—Nº 75.

LEHR, FERDINAND.—"Improvements in machinery for manu-"facturing metallic ribs for umbrellas, parasols, and other "articles."

The machinery is intended for "bending or coiling up wire "into small eyes or loops, that answer in place of the ordinary "holes or perforations in the ribs of umbrellas." It is described as consisting of the following parts:—

"1st. A reciprocating jaw or pincer, which feeds and draws the "wire, after it has been straightened, into the machine, and then "opens and leaving the wire to be operated upon turns down "out of the way, and is drawn back, then turned up, and again "seizes the wire.

"2nd. A shear having a compound motion to come up, and cut "off the wire, and then move back out of the way.

"3rd. Clamps holding the wire near the middle and towards "one end while the loops or eyes are being formed.

"4th. Mandrels and turning stubs that bend or coil up the "wire to form a loop or eye near one end and in the middle part "*of the rib.*

"5th. A mandrel and turning stub which takes the end of the "wire after it has been bent at the middle to form the loop, and "turns thereon a loop or eye for the joint by which the end of "the rib is attached; the parts then return to their former "positions and the rib drops."

[Printed, 10*d*. Drawings.]

A.D. 1859, January 22.—N° 202.

TEMPLAR, BENJAMIN. — "Improvements in umbrellas and "parasols."

The "invention refers to the means of attaching the stretchers "to the ribs, and ribs and stretchers to the ferrules;" a collar, or like piece of metal, is placed on the rib and fixed without perforating the rib, and a bearing formed on the under part of the collar, to which the outer end of the stretcher is fastened by a pin or otherwise. To connect the rib to the fixed "ferrule" a hook on the inner end of the rib is hooked over a ring, which is confined in the "ferrule." To connect the stretcher to the sliding "ferrule," a hook is formed on the inner end and passed over a ring fixed in the "ferrule."

The novelty in the construction of "fixed and moveable "ferrules" consists in attaching to them a ring, with "a series "of loops or holders" to which the ribs and stretchers are hooked.

[Printed, 6*d*. Drawing.]

A.D. 1859, February 22.—N° 485.

LUND, EDWARD.— "Improvements in the manufacture of "fabrics or textures to be used in the construction of umbrellas "and parasols."

The invention consists in making a fabric that shall be stronger in certain parts where it is exposed to wear. It is not confined to any particular description of fabric, but may be applied to fabrics of silk, cotton, linen, or wool, or others now in use. The methods of effecting the desired end are various. The warp or weft threads may be increased in strength and number, and woven thicker or closer in strips where the folds occur; or the fabric may be woven with a twill or stripe, of what weavers call "tweeled cloth." or as double cloth similar to "stay cloth," to render such places "hollow and more elastic and yielding," and causing less friction or wear; or the fabric may be woven in loops and cut into plush or velvet pile. Or "increased resistance to "wear may also be obtained by weaving such parts as 'single, or "'double twill,' or by cementing on to the fabric strips or ribands "of the same or other suitable material by means of india rubber." But it is preferred to increase the number of the weft threads, and weaving such strips or thickness, as "tweeled or twill clotn," at any determinate distance from each other."

[Printed, 4*d*. No Drawings.]

A.D. 1859, April 14.—N° 945.

BARNWELL, STEPHEN, and ROLLASON, ALEXANDER.—"Improvements in the manufacture of umbrellas, parasols, hats, "or hat covers, caps, capes, coats, mantles, dresses, gloves, and "other similar articles." The invention consists in using a "fabric" which has previously been dressed or coated with a preparation of collodion and oil. Collodion is mixed with a vegetable oil, "such as either hemp seed, rape, olives, almond, "cotton seed, and linseed" in their purest state. This mixture of collodion and oil is poured upon plates or cylinders of glass or metal, and "before it is quite set" the fabric "is laid or rolled "over it, and immediately removed, bringing away with it a thin "film" of the mixture, as described in Rollason's Specification for the manufacture of waterproof tissues, &c., No. 2849, A.D. 1858. The silk thus coated is now removed to a drying oven or stove, wherein it is submitted to a heat of from 100° F. to 300°, by which the mixture undergoes decomposition, and a slightly glazed appearance is given to the silk, which at the same time "is strengthened "or thickened," and may be made almost opaque by mixing colouring matter with the collodion and oil.

Previous to coating the goods with the mixture, they are sometimes prepared with size or mucilage. The collodion used may be that made from gun cotton.

Two or more fabrics are sometimes attached by the solution, and combined by heat in the manner described above.

[Printed, 4*d*. No Drawings.]

A.D. 1859, April 28.—N° 1067.

HARRINGTON, ROBERT.—"Improvements in umbrellas and "*parasols*." This "invention has for its object a means of

" increasing the shelter usually afforded by a parasol or umbrella." This is effected by " a projecting arm or lever," introduced " between the tube or band part and the notched wheel part of " a runner." "The notched wheel part with the stretchers fixed " to it does not encompass the stick," but " is projected " from it " by means of the arm or lever." The tube of the runner is supported as usual by the top-spring. Several modifications are given of the main principle.

[Printed, 8*d*. Drawing.]

A.D. 1859, April 28.—N° 1074.

BOYLE, Arthur.—" Improvements in the manufacture of certain parts of umbrellas and parasols."

The first part of the invention consists of machinery for making ribs of umbrellas and parasols. Dies are arranged so as at one operation to flatten the tip and notch ends of the ribs, and form an indentation for the " middle bit."

The second part of the invention deals with the construction of guides; they consist of flat pieces of metal with a flange turned up at right angles, and in which a V is cut; these guides are mounted on ordinary bolsters and have springs beneath them; the wire to be operated on is placed in the angle of the V guide, and is always in the centre of the die. The top die presses the wire into the angle of the V, and on further pressure the guides give way, and allow the dies to act on the wire. The ribs are fed into the V guides by hand or by a moving table.

[Printed, 10*d*. Drawing.]

A.D. 1859, May 30.—N° 1335.

MICKELTHWATE, Arthur, PEACE, Joseph, and HOBSON, Samuel Johnstone.—" Improvements in the coating and " covering of metallic springs; steel, iron, and other metal bands " for the use of any kind of machinery; driving bands or straps; " ribs suitable for umbrellas and parasols; stay-busks; and ribs " for stays, hats, bonnets, reeds, and crinoline, and articles of dress; " and other useful purposes." The invention consists in coating with " gutta percha, and other substances," ribs for umbrellas, and other articles " where the metal is required to be protected from " damp, also as a non-conductor of lightning." The lengths of the metallic springs are warmed, that the gutta percha may adhere more firmly. They are then drawn through the gutta percha, and passed through gauges to give them a surface resembling whalebone. Papier maché or paper pulp, vulcanised india rubber, or other adhesive substance, may be used instead of gutta percha. "Leather may likewise be fastened on steel to be " attached to drums, spindles, and other parts of driving " machinery." Flock, shoddy, or velvet pile, may be mixed with the gutta percha.

[Printed, 4*d*. No Drawings.]

A.D. 1859, July 1.—N° 1565. (* *)

BEARD, James Rait.—(*Provisional protection only.*)—" Manu- " facture of artificial whalebone."

This invention is an improvement on that described in two Specifications of Letters Patent granted to R. Wapperstein, No. 2793, A.D. 1857, and No. 1286, A.D. 1858. It " consists of " steeping the horn of animals in oil, or a composition of oil " and other matters heated to the requisite temperature until it " is sufficiently soft, giving it elasticity and brilliancy, and then " put it in a mould heated by steam, after which processes a " mandril made of wood or metal is driven into the horn to " straighten it, when it may cut spirally, as described " in " Wapperstein's Specification of 1858.

[Printed, 4*d*. No Drawings.]

A.D. 1859, August 8.—N° 1832.

BABCOCK, John Brazer.—(*A communication from Anthony G. Davis.*) — (*Provisional protection only.*) — " Improvements in " umbrellas and parasols."

In this improvement the sticks are formed of two parts, which slide the one into the other, like the parts of a telescope, and the umbrella may be packed in a small space. When the stick is fully drawn out, a spring catch holds the parts in position, but yields to a firm pressure. The spring catch which sustains the runner, when the umbrella is open, is so placed on the upper part of the stick that when this is slid into the lower part the catch is depressed, and the runner passes freely over it. Thus by one motion a pressure on the runner pushes it over its spring catch and draws the stick out to its full length ready for use.

[Printed, 4*d*. No Drawings.]

A.D. 1859, August 29.—N° 1966.

BAUGH, Benjamin.—" Certain improved machinery or me-" chanical arrangements for raising or giving form to articles " formed of sheet metal, such as knobs, thimbles, ferules, and " parts of umbrella and parasol furniture, button shells, and " other such like small articles."

The articles mentioned are produced, a number at a time, by means of "an annular pressing plate," described in Hetherington's Specification, 14,251, A.D. 1852, which presses "the edge " or periphery of the disc intended to be formed during the " time the desired shape is being imparted to it," so that "all " puckering of the metal shell" is avoided.

The patentee says: —" In giving effect to my improvements, in " combination with the pressure plate, I purpose in some instances " for it to perform the double operation, namely, of cutting out " the disc as well as holding it down during the descent of a " concentric forming tool (the end of which, being of the shape " intended to be imparted to the disc,) descends and presses it " into form, in doing which the article formed will be pressed " through a hole to be knocked off below the bed as the forming " tool rises for the next operation." " And for the production of " articles wherein it may not be desirable to cut out and form at " one operation, I introduce the blanks to the forming tool by " placing them in a vertical tube held above the bed, the exact " thickness of a blank, and by using a steel blade of the same " thickness, brought into action by the motion of the press, " a blank is forced out and carried to a sunken cavity for the " pressure ring to descend on it before the concentric forming tool " descends to put it into shape; but instead of using a blade of " steel to carry the blanks from the feed tube or tubes, the bed " may be made to revolve or reciprocate, taking care to sink " cavities in that part of the bed that passes under the feed tube " or tubes, such cavities being of the exact depth of the thickness " of the blank."

[Printed, 2*s*. Drawings.]

A.D. 1859, September 6.—N° 2036. (* *)

BLAKE, Edward.—" Improvements in apparatus for and in " treating China grass, rhea fibre, mudar, and other similar vege-" table fibres."

"This invention has for its object improvements in treating " China grass, rhea fibre, mudar, and other similar vegetable " fibres. For this purpose the fibre in the raw state is laid on a " perforated metal plate, each skein or small bundle of the fibre " being carefully laid straight and opened out, and the skeins are " separated the one from the other by partitions of perforated " metal attached to the bottom plate, and running from end to " end of it. When all the partitions of the bottom plate are " filled with fibre, a top plate, also of perforated metal, is placed " upon it, but does not press on the fibre, as it rests on the tops " of the partition plates. Several plates, having skeins of fibre " arranged between them in this manner, are placed horizontally " and one over the other in a vessel, into which they exactly fit, " and this vessel is filled with an alkaline solution, by preference " a solution of soda ash, and steam is admitted into the vessel " beneath the lowest plate, and it passes up through the perforations in this plate and in the plates above it, and traverses " the whole of the fibre the vessel contains. When this process " is complete, as is known by the appearance of the fibre, the " plates are removed from the vessel, and the skeins of fibre are " taken out one by one; they are then rinsed by hand in hot " water, and are passed between a pair of pressing rollers. The " fibre is afterwards further treated by machinery, such as is used " in the manufacture of silk waste. To prepare the fibre for this " treatment it is first dried, and then again moistened with water " containing soap in solution; in this state the fibre is placed " between plates and pressed heavily, the pressure being kept on " for several days; the silk waste machinery is then employed, " that is to say, the fibre is placed on an endless apron, which " carries it forward between porcupine rollers, and these present it " gradually to the action of a drum, on which teeth are mounted " at intervals. This machine is called a 'filling engine.' When " the teeth on the drum of the filling engine become full of fibre " the machine is stopped, and the fibre is taken off the teeth. " Each quantity of fibre is then clamped by one end between two " boards, and is taken to another machine containing an endless " web of leather or other flexible material, which travels continuously, and has card teeth fixed in it; to these travelling teeth " the free ends of the fibre are gradually presented. When the " fibre is sufficiently worked at one end it is unclamped, turned " end for end, and again secured between the boards, in order

" that the other ends of the fibre may be subjected to the card " teeth. The machine last described is called a 'dressing frame.' " When the fibre has passed through the dressing frame, it is " prepared for spinning in the ordinary manner."

This Specification is referred to in Tongue's Specification, No. 3262, A.D. 1851, where the process is used in the manufacture of umbrella coverings.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1859, September 10.—Nº 2066.

SMITH, Andrew.—(*Provisional protection only.*)—" Improvements in strengthening umbrella and walking stick handles."

A " dowell " of wood or other material is inserted into the centre of the handle, where it is generally weak (on account of the grain of the wood being " at right angles to the axis of that portion ") in such manner as to traverse the length of the handle and strengthen it.

[Printed, 4*d.* No Drawings.]

A.D. 1859, October 22.—Nº 2416.

FOX, William, and WILLIS, James. — " Improvements in " the manufacture of parasols and umbrellas, part of which " improvements is applicable to other purposes."

1. The inventors form the sticks or stems of parasols and umbrellas of steel tubes, hardened and tempered after being soldered. The tubes are light, strong, and elastic, and are applicable as walking sticks. They are to be tempered according to a process described in Patent No. 2741, 1856.

2. They apply to such umbrella tubes top ferules, by raising from sheet metal any kind of cap, fixing it by working it in a pair of dies, so as to groove both cap and tube.

3. They fix upon the stems or sticks rings of metal for giving hold to runner springs. Three methods are described of fixing the rings upon the stems.

4. They fix top notches upon any sort of stick by means of rings, as above.

5. They manufacture top notches and runners of steel, hardened and tempered after being soldered.

6. They cover the runners with a new guard, which is " smooth " to the hand, ornamental to the eye, and easy of removal."

7. They make top notches by grooving a tube longitudinally, and then turning it down so as to form a series of rings.

8. They shape the ends or tips of steel parasol ribs, and then cover them with silver, aluminium, or other white metal, worked between dies, or coat them with such metal by means of the galvanic battery.

9. They form joints for folding sticks, either by means of a sliding tube or a spring catch hinge.

10. They attach the handle of a folding umbrella to the tapered socket which is to receive it by means of a screw.

Reference is made to a grant of Letters Patent, dated A.D. 1859, November 19, to Samuel Fox.

[Printed, 8*d*. Drawing.]

A.D. 1859, November 16.—N° 2602.

BURROW, JAMES.—(*Provisional protection only.*) — "Improve-
" ments in umbrellas and parasols."

The ribs are of steel, having a ▼ or a **T** section, with a longitudinal web or projecting rib. "The edges of the fabric " are attached to the sides of the wedge-shaped rib of the first " section or projecting rib of the second section." When the parasol is open the thin edge of the wedge-shaped or the projecting web or rib will be seen on the inner surface. The stretchers are of similar section. A slight curve is made in each rib a short distance from its outer end, through which, by a duct or channel the water is conveyed away.

[Printed, 4*d*. No Drawings.]

A.D. 1859, November 30.—N° 2711.

TEIL, JEAN BAPTISTE.—"Improvements in the construction of
" umbrellas and parasols."

A double fork-piece is placed horizontally under each whalebone or metal rib, the centre of the double fork-piece being at the place where the supports are attached to the rib, and the ends of the double fork-piece being attached to the whalebone rib. This adds greatly to the resisting power of the rib, by causing it to expose a " greater resisting space to the wind."

[Printed, 6*d*. Drawing.]

1860.

A.D. 1860, January 27.—N° 214.

NEWTON, William Edward.—(*A communication from L. K. Selden.*) — "An improved folding frame, designed for umbrellas, "parasols, tents, awnings, sun-blinds, and other analogous "structures."

The object of this invention is to obtain a frame which may be folded within a small compass, and will allow the article to which it is applied to be closed in a compact form. The handle is jointed, and has a slide. The ribs extend about half-way from the edge of the cover to the top of the stick. Stretchers are pivoted to the upper ends of the ribs, at their other end to the runner. The ribs and stretchers are connected to the top of the stick by braces. The ribs are kept in their place by stretchers and braces, and distended or closed by moving the slide. When the ribs are closed, the central portion of the cover folds within the outer portion, and the braces fold inward. When the slide is raised, and the ribs and cover are distended, no catch is required. Another advantage, besides dispensing with the usual catch, is that the cover cannot be blown by the wind inside out, as frequently happens with common umbrellas. The ribs may be of whalebone, metal, or cane.

The invention may be applied to a tent without material modification. In applying the invention to an awning attached to a building, the braces are attached permanently to the building, and the frames are placed side by side, at certain distances apart. Instead of being arranged radially to a central pole, the inner ends of the stretchers are connected to a tackle, and each fitted on a guide rod. By working the tackle the frame may be folded.

[Printed, 8*d*. Drawing.]

A.D. 1860, February 4.—N° 308. (* *)

SMITH, John.—" Improvements in the manufacture of handles " or knobs for sticks, umbrellas, and parasols," and for other articles.

The " composition or plastic material " used for these articles is manufactured by mixing about equal quantities of shell-lac and ebony dust in a heated state, and adding lamp black as colouring matter. Other colours may also be given to the composition by using suitable pigments. The heated materials are well mixed upon a slab heated by a stove, and are then pressed in suitable moulds. If great density is required, mineral substances, as "barytes or oxide of manganese," are added, or vegetable fibres may be used to give tenacity.

For the purpose of giving greater strength or of economizing the composition, it may be moulded upon cores or blanks of metal or wood. "This process of manufacture would be especially "applicable to the production of handles for umbrellas, sticks, "and swords."

[Printed, 4*d*. No Drawings.]

A.D. 1860, February 14.—N° 409.

WEEKS, John.—" Improvements in umbrellas and parasols."

The improved umbrellas dispense with the common slot fastening formed in the handle, and instead of it have a "double "or single action surface runner or slide catch to which the "ordinary extending rods or stretchers are secured, a releasing "stud and spring in connection with stops or eyes affixed to the "upper and lower portions of the stick being employed."

The runner has an "enclosed slot or bridge forming a channel "upon the exterior thereof," in which the spring catch is secured, which passes through an opening in the notched head of the runner. A "thumb stud" passes through the bridge, and, being pressed, releases the spring from "the fixed stops or eyes at either "end of the stick," by whose aid the umbrella is held open or closed.

By a modification of the invention the bridge and stud are dispensed with, and the spring bent and secured by shoulders on the runner.

[Printed, 10*d*. Drawing.]

A.D. 1860, February 27.—N° 535.

COOLEY, Robert Barlow. — "Improvements in the manu-"facture of plain or ornamental woven or looped fabrics from "certain descriptions of yarn, and for the application of such "fabrics to the making of various articles of dress, and for other "*uses, such as* hats, caps, gloves, hosiery, lace shawls, mantle

" and other cloths, curtains, table, umbrella, and other covers, " such fabrics being made with or without terry plush or cut pile " surfaces."

The invention consists in the application of fabrics spun from certain sorts of yarns to various purposes, amongst which covering umbrellas is mentioned.

The yarns preferably employed "are spun from mixtures of " silk, mixed " " with the fur or hair of the beaver, the vicugna " or vicuña, the musquash, or with other similar descriptions of " fine fur, hair, or down."

[Printed, 4*d.* No Drawings.]

A.D. 1860, March 6.—N° 608.

COX, Thomas, the younger, and HOLLAND, William.— " Improvements in the manufacture of stretchers of umbrellas " and parasols."

The improvement consists in the method of forming the forked ends of the stretchers, which are jointed to the ribs. Blanks are cut from the sheet metal, of such shape that when doubled they make a fork of the required shape and a part of the base of the blank is bent into an inverted U-shaped form, the sides of the blank, forming the prongs of the fork, being brought opposite to each other. The stretcher is made of cylindrical wire; on this end are a series of indentations on opposite sides. A part of the fork is placed upon the indented end of the stretcher, and is closed upon it by pressing tools, so that the metal enters the indentations on the stretcher. The fork being finished, a hole is pierced for the joint wire. The indentations may be made on the fork, or it may be fixed on the end of the stretcher by pressure alone, without making indentations on either stretcher or fork, but the previous method is preferred.

[Printed, 6*d.* Drawing.]

A.D. 1860, April 19.—N° 984.

WILLIS, James. — " Improvements in the manufacture of " umbrellas and parasols, part of which improvements is " applicable to walking sticks."

A novel means of improving the appearance, increasing the strength, and reducing the weight and bulk of an umbrella " whereby the rain falling upon an umbrella or parasol may be

" diverted from one or more of the tips, and made to fall on the " remainder."

The first part of the invention relates to the strengthening the frame without increasing the diameter of the closed umbrella Those top notches and runners are used which have the notches cut through to the stick, manufactured under Patents dated September 18, 1855, and October 22, 1859. "A solid annular " shoulder" is applied "under the ring of notches," the ring being secured by brazing. The rings employed in making top notches and runners are formed from solid steel or iron rods. The rods are grooved throughout their length, to form the radial notches. The annular grooves are turned for the wire, the centre is bored out, and the finished rings cut off; solid instead of welded rings are thus produced. The cross heads of the stretchers and ribs fit loosely into the ends of the ribs and stretchers, and are made of a segmental shape. The ribs and stretchers are free to turn on their cross heads. The cross heads are fixed by a method patented Sept. 18, 1855, and a guard affixed as in Patent dated Oct. 22, 1859.

To improve the curve of umbrellas the ribs are flattened, between the tip and the junction with the stretcher, by submitting them to the pressure of an excentric roll which nips and flattens them at the part that lies against the runner.

Instead of forging the hook springs, they are formed of sheet steel, and cut out from a proper shaped blank; their ends are doubled up along the middle of the strip.

To reduce the weight of umbrella sticks where wood is used in place of cane for the stick, it is bored out from the point upwards. In place of the tubular metallic stems being japanned, they are veneered with wood or vulcanised rubber. Wood shavings are formed with chamfered edges, which are laid helically round the tubes and secured by an adhesive composition; when dry, they are polished up and finished, and form elegant and strong sticks, either for umbrellas or walking sticks.

A means of preventing the rain from dripping from one or more tips when the umbrella is in use," is given, since "the rain falling " from the forward tip or tips is drifted by the wind on the person " carrying the umbrella:"—To one or more of the tips a tendency is given "to turn upward as the umbrella is opened, and " thus form a sort of gutter in the covering which will divert the " water laterally, and cause it to fall from the adjoining tips."

" This automatic action " is produced by jointing the rib and connecting the jointed piece to the stretcher by a rod, or by making the rib elastic, and leading a cord along its length, which bends up the end.

[Printed, 1*s*. Drawing.]

A.D. 1860, June 13.—N° 1450.

CHATWIN, George Henry.—(*Provisional protection only.*)— " An improvement in the ribs of parasols and other like " articles."

The " invention relates to those parasols made with a flounce or " other like ornament, and consists in forming on or fixing to " the rib a lug or projection pierced or perforated at or about " two inches more or less from the tip, for the purpose of " securing the covering, and if need be the top of the flounce."

[Printed, 4*d*. No Drawings.]

A.D. 1860, June 30.—N° 1584.

COX, Thomas, the younger, HARRINGTON, Robert, and HOLLAND, William.—" Improvements in the manufacture " of runner notches and top notches for umbrellas and parasols."

From sheet iron or brass, or similar alloy, blanks are cut, having the form of flat rings, a little larger than the notches required; the ring is placed in an ordinary piercing press to make a series of radial piercings on its external edge. The number of the slits is double that of the ribs or stretchers, and the wire which forms the joint of the notch lies in the slits. The blank or ring is then successively operated upon by pairs of shaping dies to enlarge the partially formed notch until the radial depressions are formed round the periphery of the ring, and the finished notch is produced.

Runner and top notches are made from short pieces of tubing in which a series of radial corrugations, parallel to the axis of the tube are formed. Across the projections grooves are cut for the joint wire to lie in. The tube is cut and sliced by a circular saw, and the top notch is formed by soldering a tube to the notch. Or short pieces may be cut from a plain tube, and afterwards corrugated.

[Printed, 6*d*. Drawing.]

A.D. 1860, July 19.—N° 1746.

HOLLAND, Henry.—(*Provisional protection only.*)—" Improvement in the manufacture of steel tubular stretchers."

This invention deals with the manufacture of three pronged tubular stretchers for umbrellas. A steel tube of the required size is cut through or slit at one end; the slit end is flattened to form the two outer prongs of the fork of the stretcher, the inner or middle prong is made of steel wire, inserted in the tube, and flattened.

[Printed, 4*d.* No Drawings.]

A.D. 1860, July 20.—N° 1757.

HÄHNEL, Charles Wenzel.—(*A communication from Louis Prang.*)—" Improvements in the construction of parts of umbrellas and parasols."

The runner is formed with a hole, through which is passed the end of a trigger that is hinged to the runner. The umbrella is held open by the end of the trigger entering a hole in the stick, and to close it the end of the trigger is drawn out of the hole in the stem. This liberates the runner, which then slides down the stick, where another hole receives the end of the trigger, for holding the umbrella closed. A spring is applied to the trigger to hold the end in the holes in the stick.

[Printed, 6*d.* Drawings.]

A.D. 1860, August 11.—N° 1948.

HOLLAND, Henry.—(*Provisional protection only.*)—" Improvements in the manufacture of parasols and umbrellas."

The tubular rib is formed of steel, near the middle of the rib; the metal is of a greater thickness than at the other portion, and the edges of the wider portion are raised and lie parallel to one another, the edges of the other portion being brought together to form the tubular rib. A strengthening piece is inserted between the parallel portions of the rib; the fork on the end of the stretcher has its prongs lying between the strengthening piece, and the sides of the rib. The wire forming the joint of the stretcher passes through three thicknesses of steel and through the prongs of the fork, and is riveted on the outside of the joint.

[Printed, 4d. No Drawings.]

A.D. 1860, August 11.—N° 1949.

COTTERELL, Henry.—" Improvements in the manufacture " of umbrellas and parasols."

The object of this invention is to make the stretcher joints of umbrellas from sheet metal. Blanks of a nearly rectangular shape are cut from sheet brass, of length equal to that of the joint and of such width that when the middle portion is doubled, it is sufficient to form a fork for the joint; the middle part has two tongues on it, which are pierced for the joint pin. The pierced blank has two parallel slits, forming three flaps on each side of the uncut portion of the blank, the outer flaps are bent into a trough-like figure, and the middle flaps are bent parallel to each other. The stretcher joint is fixed to the rib of the umbrella by closing the trough like parts by pressure on the rib; and notches are made by which the joint is prevented from sliding on the rib.

Sometimes all the flaps are bent in the same direction.

[Printed, 6*d*. Drawing.]

A.D. 1860, September 15.—N° 2249. (* *)

BARNWELL, Stephen, and ROLLASON, Alexander.—" Improvements in combining and mixing certain solutions of " pyroxylene with animal, mineral, and vegetable substances, by " which its quality is altered in such manner as to produce hard, " resistent, adhesive, plastic, or resilient compounds and articles " unalterable in their nature, and varied in colour, which said " compounds in a state of solution may also be advantageously " employed as paints or varnish." The patentees describe at length their economic method of manufacturing pyroxylene by using common rags of any description in place of cotton wool; also the different ingredients combined therewith, oils, gums, ivory, and bone dust, vegetable or mineral pigments, ether, alcohol, anhydrous basic salts, mineral substances, and animal matters, the proportions varying according to the nature of the article to be produced.

Mention is made of the application of the material to umbrellas and parasols. How the application is to be made is not mentioned, except that it is in a state of solution. It is probably meant to be as a varnish for coating the covers for the purpose of waterproofing, strengthening, and thickening the fabrics used, similarly to the methods described in Specifications No. 2849, A.D. 1858, and

No. 945, A.D. 1859. In reference to this subject the patentees state as follows:—" In dressing silks and other like fabrics we " prefer to use the solution in a very limpid state, varying the " ingredients and the proportions of the same according to the " requirements of the case, and as to whether the article was to " be dried by artificial heat or spontaneously." " Solutions used " as dressings or coating for surfaces may be applied either by " the brush, the spreading knife, by dipping, or from polished " surfaces."

[Printed, 6*d*. No Drawings.]

A.D. 1860, October 27.—N° 2621.

SPARKHALL, Edward.—" Improvements in umbrellas and " parasols."

This umbrella is formed with a ball-and-socket joint, or swivel joint, in the handle, which causes the top or covering part to turn round upon the handle, so that when an umbrella is open, should it strike upon anything, it will turn round upon the handle, and thus prevent accidents.

Instead of connecting the ribs and cover to the handle, they are connected to a piece which has a notch with an orifice corresponding with an orifice in the handle, into which is inserted a long stiff wire or pin secured by a cross pin passing through it, " and kept secured to the handle or stick (but free to turn round) " by the pin which goes into the notch in the said pin. It will " be evident to the practical man that a modified form of this " arrangement will constitute a ball and socket joint, as the end " of the pin" "might have a ball turning in a socket, or vice " versa."

[Printed, 6*d*. Drawing.]

A.D. 1860, October 31.—N° 2661. (* *)

GHISLIN, Thomas Goulston.—(*Provisional protection only.*)— " Preparing, applying, and adapting certain articles of vegetable " production called eiklônia buccinalis, proteaceæ, juncus serratus, " juncus trista, and amaryllideæ, to further new purposes of " manufacture," beyond those claimed in a previous Specification, No. 1049, A.D. 1857. The plant first named can be substituted for shagreen, dogskin (fish), horn, whalebone and other bones; it can be manufactured into handles and sheaths of every description; and it serves for covering and ornamenting canes and walking sticks, and a variety of articles.

[Printed, 4*d*. No Drawings.]

A.D. 1860, November 9.—N° 2761.

CHESTERMAN, JAMES.—" Improvements in tents, marquees, and other like articles, parts of which are applicable to umbrellas " and parasols."

The only parts of the invention suitable for umbrellas and parasols are the forming the ribs taper, and the using " grooved " rollers or revolving contles " to form hollow ribs.

[Printed, 1*s*. Drawings.]

A.D. 1860, November 26.—N° 2892. (* *)

HADWEN, JOHN WILSON.—" Improvements in the treatment " of silk waste, waste silk or silken fibre, and in the manufacture " of yarns and tissues from the same, whether alone or in admixture with other materials."

This invention " consists of mixing in one or more of the processes for preparing fibrous materials to be spun (such as the " scribbling, carding, or drawing processes) of silk waste, waste " silk, or other silken fibre of different colors and suitable proportions of each color to produce mixed hues or compound " tints in yarn or fabrics of an ornamental description; the " tints or hues thus obtained being either regular and uniform, " delicately clouded, mottled, or parti-colored according to the " relative proportions of the various colors mixed together."

The patentee states that he also mixes or blends silk waste or waste silk with other materials in the manufacture of yarn or fabrics at any of the processes of repairing fibrous materials to be spun, or at one of such processes, repeating it at another, " as will " be found desirable in practice;" and that by " the aforesaid " process " he produces " a novel description of cloth for covering " umbrellas and parasols, the peculiarity of which consists in its " being made wholly or partially of yarns made as herein-before " described, or of the said yarns doubled with some other kind of " yarn or material."

[Printed, 4*d*. No Drawings.]

A.D. 1860, December 12.—N° 3048.

NEWEY, Henry.—(*Provisional protection only.*)—"Improve-"ments in the manufacture of certain parts of umbrellas and "parasols."

The improvements consist in employing solid wire stretchers in combination with solid steel ribs, the stretchers being pierced at both ends, or without the forked end. To connect solid stretchers to solid ribs, a middle bit or joint is formed from a piece of sheet metal of the form of a cross, bent up to embrace the back of the rib, and closed upon it. The projecting ends of the bit form the horns of the joint, which are pierced, and receive the pierced end of the joint between them, and are connected by a pin. Sometimes the middle bit has stops to prevent the frame turning outward.

2ndly. Notches of runners are stamped out of sheet iron at a red heat, they being softer and tougher than when punched in a cold state.

3rdly. A method of attaching solid knobs to the ferule end of metal tubes by making the stem of the knob taper.

4thly. Metal tubes to be straightened are passed through a machine patented by James Cocker, 1855, No. 2781. The tube is passed slowly through, and strained over antifriction rollers.

[Printed, 4*d*. No Drawings.]

1861.

A.D. 1861, January 30.—N° 244.

BOYLE, Arthur.—"Improvements in the manufacture of "umbrellas and parasols."

The improvements apply to that part of the rib joint, called the "get" or "middle bit," fixed on the rib of the umbrella and jointed to the fork of the stretcher. The middle bit is hollow, and made from sheet metal. A blank is raised by dies into a cup like form; this is drawn through another die to improve the form, the flat parallel sides of the middle bit standing above the *edges or ends of the* "get" and forming two flaps. Holes are pierced in the sides of the middle bit, and the axis of the bit works in these holes. The finished " get " or middle bit is placed upon the rib, and the flaps closed upon the rib in the usual manner.

In manufacturing the stretchers, they are formed from a continuous wire instead of from a wire cut into lengths; the wire is very nearly, but not quite, separated at the point where the figure of one stretcher ends and that of another begins; on the separation of the dies, the nearly divided wire is broken off, that end of the wire having the figure of one end of a stretcher is pushed up to a fixed stop, and the wire is again operated upon by dies, and so on.

[Printed, 8*d*. Drawing.]

A.D. 1861, February 2.—N° 277.

SPENCER, George Holme, and **COOK**, Richard George.—(*Provisional protection only.*)—" Improvements in umbrella and " parasol furniture, and in the means or apparatus employed in " treating umbrella and parasol furniture, parts of which are also " applicable in heating steel wire ribs, rods or tubes, for other " purposes."

The improvement gives to the ends of the ribs a "neater " appearance and additional strength by the formation of a groove " with the hole or eye in the centre thereof."

" Also, the improvements relate to heating steel wires and tubes, " also ribs and stretchers of umbrellas and parasols, for the " purpose of hardening the same." They are placed in iron cylinders, which have in their transverse section chambers or compartments, wherein the parts are enclosed and repeatedly turned in the furnace. This gives a more regular heat to the parts held therein. Steel wire ribs and rods are treated in the same manner.

[Printed, 6*d*. Drawing.]

A.D. 1861, February 23.—N° 462.

MEYERS, Michael. — (*Provisional protection only.*) — " Im- " provements in woven fabrics."

" This invention consists of combining or amalgamating with " silk, cotton, or wool, flax or hemp, either separately or collec- " tively, in the manufacture of woven fabrics, such mixture of

" materials producing a fabric very suitable for the covers of " umbrellas, parasols, wearing apparel, and other similar purposes."

[Printed, 4*d*. No Drawings.]

A.D. 1861, March 9.—N° 594.

MEYERS, MICHAEL.—(*Provisional protection only.*)—"Improvements in woven fabrics."

"This invention consists of combining or amalgamating with " silk, cotton, or wool, jute or Indian grass, either separately or " collectively, in the manufacture of woven fabrics, such mixture " of materials producing a fabric very suitable for the covers " of umbrellas, parasols, wearing apparel, and other similar " purposes."

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 6.—N° 853. (* *)

GHISLIN, THOMAS GOULSTON.—(*Letters Patent void for want of Final Specification.*)—"Preparing, applying, and adapting certain articles of vegetable production called eiklonia buccinalis, " proteaceæ, juncus serratus, juncus trista, and amaryllideæ, to " further new purposes of manufacture," beyond those claimed in a previous specification, No. 1049, A.D. 1857.

The plant first named can be substituted for shagreen, dogskin (fish), horn, whalebone, and other bones; it can be manufactured into handles and sheaths of every description; and it serves for covering and ornamenting canes and walking sticks, and a variety of articles.

[Printed, 4*d*. No Drawings.]

A.D. 1861, April 8.—N° 855.

SMITH, WILLIAM.—"An improvement in the manufacture of " umbrellas and parasols, and other similar articles."

The improvements relate more especially to the construction of top notches and runner notches, and the ends of the ribs and stretchers to fit them. A disc of metal is raised by any of the usual processes into the required form, after which its ends and points are turned towards the centre, so as to form a groove in which the ends of the stretchers are laid before fixing on the *handle or stick or tube* portion of the runner notch, "which part

" is made of a circular piece of metal drawn by the usual process " into the form of a tube, and beaded and turned on its edge " by pressure." The ends of the ribs and stretchers may receive various shapes. These parts may be made of metal or whalebone or cane or other material.

[Printed, 6*d*. Drawing.]

A.D. 1861, May 7.—N° 1153.

WILLIS, James.—" Improvements in umbrellas and parasols."

Instead of making solid steel ribs for umbrellas parallel from end to end, in this improvement they are made for any desired portion of their length parallel; but towards their outer ends they gradually increase in width and decrease in thickness, the outer surfaces being convex at such parts, and the inner surfaces flat. To produce this form of rib, rollers are geared together and grooved. The rib is projected between the rollers to the part where flattening commences; as the rollers revolve they reject the rib and flatten it, rendering it more flexible towards the point, and causing it to receive a better shape. The flattening rollers may be formed to give an undulating form to the under side of the rib. In place of fixing the covering of the umbrella directly to the tips of the ribs, a small piece of fabric is fixed to each tip of a rib by clenched rivets, and the covering fabric is sewed or stitched to the fastened pieces of fabric.

Several methods for securing the covering to the rib are given. Runner springs are made with two catches or hooks, and with only one eye for an axis which comes into a notch where the stretcher is attached to the runner, so that either the same wire as fastens the stretchers to the runner, or a separate one may be used to connect the spring and the runner. The spring may be formed in several ways; it may be forged "out of the solid," or of steel wire bent to the required form.

The spring may be fixed by wire, or by a method patented April 19, A.D. 1860.

[Printed, 10*d*. Drawing.]

A.D. 1861, May 8.—N° 1157. (* *)

PICKETT, Joseph.—(*Provisional protection only.*)—" Improve" ments in covering or partially covering the sticks and handles " of whips and parasols, as also various other articles with flock,

" and producing ornamental effects thereon." A piece of cane or wood or other substance, prepared to the desired form, is coated with a strong adhesive varnish; when the varnish is somewhat set the article is dusted over with flock, " such as is used for orna-" menting paper-hangings." To produce different colours, portions only at a time are varnished and dusted. Indented patterns may be formed by pressure from dies or rollers. The braiding or plaiting machine may be employed in union with the above. The flocked article may be sized and then varnished so as nearly to resemble leather.

[Printed, 4*d*. No Drawings.]

A.D. 1861, June 13.—N° 1517.

HOLLAND, HENRY.—(*Provisional protection only.*)—" An im-" provement in the manufacture of umbrellas and parasols."

" The improvement consists in securing the ivory finish or orna-" ment which is affixed to the ends of the tubular ribs of " umbrellas and parasols, by passing through the said ornament " a headed metal pin headed somewhat like an escutcheon pin " to the length of a quarter of an inch, fastening it in the end of the rib by compression. The portion of the pin on which the end of the rib is closed is of less diameter than the other part, so that when the end of the rib is closed the pin cannot be withdrawn from the rib.

[Printed, 4*d*. No Drawings.]

A.D. 1861, June 19.—N° 1574.

CLARK, WILLIAM.—(*A communication from Pierre Allamagny.*) —" Improvements in umbrellas & parasols."

These improvements consist in mounting the ribs and cover of the umbrella so as to turn on the handle or stick, and prevent sudden gusts of wind turning the frame inside out, as is the case when the frame is a fixture.

The purpose is effected by mounting the ribs and frames on a socket or sockets which turn on another socket or sockets fixed on the stick.

Several methods are described of attaching the tube forming the stick of the umbrella, and detached parts of a rotary nut or socket applied to the stick, and serving as its axis, are also shown.

[*Printed, 6d. Drawing.*]

A.D. 1861, August 15.—N° 2036.

DESBOROUGH, Spendlove.—"Improvements in the manu-
" facture of umbrellas and parasols."

The invention relates to the construction of the metal ribs, stretchers, and joints of umbrella frames, and the forming them of metallic wire having a section "of T, triangular, bayonet, or " other similar shape, in place of solid, tubular, or trough shape.' Ribs of this form are " suitable for having the joints formed " thereto which connect the stretchers to the ribs and runner, and " the ribs to the top notch." The ends of the ribs are pressed in dies to form the tip and joint, and the ends of the stretchers are also shaped "suitably for connecting them to the ribs and the " runner."

The metal ribs and stretchers are formed of a double trough or ᗰ shape, with two or more longitudinal channels, The ribs may either be drawn through dies, or formed from a flat strip of steel by passing it through rolls of suitable profile. To connect the stretcher to the rib the latter is slightly flattened, and a " middle bit" applied by pressure. Instead of a forked end on each stretcher, each end is flattened and pierced alike; the middle bit has a recess to receive the end of the stretcher, and the parts are secured by a pin.

[Printed, 6*d*. Drawing.]

A.D. 1861, August 26.—N° 2124. (* *)

LECHÊNE, Auguste, and NATHAN, Charles.—" Improve-
" ments in the manufacture of ladies' collars, cuffs, or other
" ornamental articles for dress or furniture, to imitate such articles
" made of lace or embroidery.

The invention "consists in the application of embossed and " perforated paper, woven fabric, or other suitable material, " stamped or cut out in varied designs, by means of suitable dyes " or tools, such ornamental, embossed, and perforated designs " being cemented or attached by some suitable adhesive material, " to a groundwork of net, tulle, tarlatan, muslin, cambric, or " other suitable fabric."

The patentees state that it is well known that designs in imitation of lace formed by stamping, perforating, or embossing paper have been employed for ornamental purposes before the date of

The second part of this invention consists "of a machine for "making the knobs on the ends of umbrella and parasol ribs."

"A feeder moving horizontally carries the wires (which are fed "to it by hand) to a pair of tools, between which the wire is "seized. The said tools have a reciprocating motion in a vertical "plane, one of the said tools moving upwards, while the other "moves downwards. The wire pressed between them is thus "made to have a backward and forward rotatory motion. Its "end during this motion is operated upon by a pair of dies, one "of which is fixed, and the other rises and falls rapidly. The "said dies are of the figure proper to form by their action on the "end of wire a head or knob of the required size and shape. The "motions of the feeder and tools, by which the rotatory motion is "given to the wire, as well as that of the moveable die are given "by cams on the main shaft of the machine."

The third part of the invention consists "of a machine for "grooving notches." "The notches to be grooved are dropped "by hand into a feeder, which advancing horizontally carries the "said notches one at a time to the centre of the lathe or machine. "The rotating spindle, which has a sliding motion, advances "against the notch and fixes it, and gives to it a rotatory motion. "The feeder is drawn from under the notch, and a cutting tool "advancing from the side opposite to that on which the feeder is "situated, turns the groove in the notch. The cutting tool retires, "and the rotating spindle sliding away from the notch, it falls "from the machine."

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1861, October 4.—N° 2482. (* *)

GHISLIN, THOMAS GOULSTON.—"Improvements in the treat-"ment or preparation of certain foreign plants or vegetable sub-"stances, and in the application of the same to various useful "purposes for which horn, shell, whalebone, indurated leather, "fish skin, ivory, bone, hard woods, and compounds of india-"rubber or gutta percha have hitherto been employed." The plants are the "Eiklonia buccinalis, Laminariæ buccinalis, Duvil-"lea utillea, Sarcophycus potatorum, and their allies." The uses to which they are applied are various; among them are walking sticks and handles for umbrellas and parasols. Several processes are described for preparing the raw material: after removing "all

" extraneous matters " it is immersed in a hot lye of caustic lime for about three hours; steeped in a bath of diluted sulphuric acid; placed in a solution of common soda; and washed in pure water; it is then removed to the drying room, and when half dry it is shaped into any form desired. Or it may be steeped in a solution of American potash, then in dilute nitric acid, and afterwards in spirits of naphtha. Or it may be steeped for about three hours in hot water or water rendered slightly alkaline, and then be stamped, embossed, &c.; when removed from the press, it is hardened by steeping it for about an hour in a hot solution of nitrate of lead or of common alum, or in sulphate of alumina. Other processes are given. The coloring matter may be extracted and an appearance of ivory given " by submitting it to the action " first of a warm solution of soda, second of sulphurous acid, " third of chloride of lime, and fourth (if required) of chlorine " dissolved in water or in the form of gas." When bleached, other dyes may be applied.

[Printed, 4*d*. No Drawings.]

A.D. 1861, November 14.—N° 2870.

HEATH, Robert.—An " improvement in umbrellas and para- " sols."

This improvement is to connect the ribs and stretchers of umbrellas together. An eye is attached to each of the ribs by brazing or soldering, made of wire or thin strips of metal, which being bent or shaped into the proper form is passed through the hole at the end of a stretcher, and then fixed to an umbrella rib; or the material of which the eye is formed may be passed through the holes before shaping.

[Printed, 6*d*. Drawing.]

A.D. 1861, November 28.—N° 3001.

CARPENTER, Samuel Alfred.—" Improvements in attaching " name plates or labels to umbrellas, parasols, walking sticks, and " whips."

The name plate, or label, is attached to a spring tubular clip, which is sprung on to the walking stick or whip, and is made of a piece of thin sheet steel bent into a tubular form; the opposite parallel edges of the clip being turned back to round them. By separating the rounded edges of the clip to a sufficient distance,

" growing in various parts of the Indian peninsula, the fibre " from which is known as the 'mudar' or 'yercum fibre;' also " of the 'Beaumontia grandiflora,' a tropical plant of the order " 'Apocynaceæ.' "

[Printed, 4*d*. No Drawings.]

1862.

A.D. 1862, January 3.—N° 26.

BELLOCHE, François Sébastien, and BOLLACK, Herman.—" An improved parasol."

By this improvement the frames of parasols are composed with two parts joined together by a free hinge. The top part of the frame is attached to the handle, overlaps and works freely on it. The other overlapped portion is attached at the top. " From " this arrangement, when the parasol is closed, the lower half of " the frame, with the covering stretched upon it, will fold back " over the upper part into a shape similar to a cone with the apex " downward." If the edge of the cover be trimmed so as to form an edge or border of artificial flowers, the parasol when shut will represent a large bouquet or vase of flowers."

[Printed, 8*d*. Drawing.]

A.D. 1862, January 16.—N° 120.

MATANLE, Thomas.—(*Provisional protection only.*)—" An im- " proved runner fastening for umbrellas, parasols, sunshades, and " other similar articles."

The improved runner fastening dispenses with the spring catch that keeps the umbrella open or shut, and prevents the stick being weakened by the slot in which the catch works. The improvement consists in attaching to the stick a pin, or other projection, and in forming at each end of a tubular runner a curved formed slot into which the pin enters and locks itself as the umbrella is opened or closed, being forcibly held therein by the natural spring of the umbrella frame. A moderate pressure and slight turn of the runner by hand releases the latter. The locking motion is self-acting.

[Printed, 4d. No Drawings.]

A.D. 1862, January 31.—N° 253. (* *)

LITTLEHALES, David.—" An improved plastic compound as a " substitute for papier maché." The compound is made from " oatmeal, flour, pea, bran, rye, barley, or linseed meal, or other " farinaceous or oleaginous meal," mixed "with tar or other " varnish until it becomes of a thick pasty consistence;" it is then moulded in dies, or formed into sheets, and dried in a japanner's stove. When perfectly dry and hard, it is saturated with linseed or any other suitable oil, and afterwards finished with varnish or colours. This compound can be made into umbrella, walking stick, and whip handles and a great variety of articles useful and ornamental.

[Printed 4*d.* No Drawings.]

A.D. 1862, March 18.—N° 753.

ILES, Charles.—(*Provisional protection only.*)—" Improve- " ments in the manufacture of umbrellas and parasols."

Discs of metal of a size to form the top and runner notches, are stamped with recesses for receiving the ends of the ribs and stretchers, which are made " of a round or globular shape, having " a neck below or under it that works in a slot made in one of " the recesses, and the globular part is made to fit into and " occupy the other portion of the recess," so that when two of the discs are brought together, they hold the ends of the ribs and stretchers without using wire to connect them. The stretchers are connected to the " middle bit " by making at each end of it a recess forming half a globe, and the piece of metal is bent round the rib; the sunk recesses are brought together and enclose the round part formed on the end of the stretcher. The middle bit is made of sheet metal and the parts in contact with the fork have a projection raised by dies and pressure. It is drawn over the rib, and the ends are made to clip over the rib to hold the middle bit firm. The handles and tips of parasols are made of china, or of hard cements, such as Keene's, which bear a polished surface. The heads of the rivets for connecting middle bits and stretchers are made of a " rounded " dome or scutching-pin shape."

[Printed, 4*d.* No Drawings.]

A.D. 1862, March 28.—N° 870.

LUBLINSKI, Robert.—"An improved method of jointing "crutch hooks on umbrellas or walking canes."

The crutch hook or handle is fixed in the following manner to the stick. A plug of hard wood or metal is inserted in the hollow at the top of the cane, the plug being made quite fast inside the cane so that a portion protrudes upwards to fit into a receptacle in the crutch hook or handle made to receive the top of the plug. A steel peg passes horizontally through a part of the hook from the back, and through the portion of the plug protruding upwards, thereby fastening the hook to the stick. The hole in the back of the handle for the peg, is filled up with a piece of the same cane. A portion of the top of the cane is grooved out to "allow the handle to drop or fit in, while the sides "of the groove will grip or clutch" the handle and make the joint firmer.

[Printed, 8*d*. Drawing.]

A.D. 1862, April 11.—N° 1039.

HOLLAND, Henry.—"Improvements in manufacturing the "stretcher joints of umbrellas and parasols."

To make this joint on tubular steel ribs, a blank is cut a little wider at the middle than at the ends; this blank is inserted at the place on the tubular rib where the joint is to be made, and fixed by compressing the tubular rib upon it. The flange or joint piece is then pierced, and the rib finished in the usual manner for hardening. The rib and joint piece are afterwards hardened, tempered, and covered with brass as follows:—A piece of thick brass wire is grooved on one side and has a short longitudinal slot cut in its end. A length more than equal to that of the piece to be covered is cut off. This brass bit is compressed upon the joint piece and fixed; a hole is drilled in the brass bit "coincident" with a hole in the joint piece through which the riveting wire is passed. The joint is finished by trimming it with a file round the edges of the covering.

A method is also given of manufacturing the stretcher joint on solid steel ribs, by compressing the steel wire intended for a rib, except in that part where the joint is to be made. This is effected by means of grooved rollers. The unreduced part is then flattened out to form a flange, and the steel rib hardened, tempered, and covered with brass as before.

[Printed, 8*d*. Drawing.]

A.D. 1862, April 16.—N° 1099.

HADWEN, John Wilson. — (*Provisional protection only.*) — "Improvements in the treatment and application of soft silk "waste."

"This invention relates to improved methods of treating the "material known as soft silk waste for the purpose of equalizing "and cleaning the fibre more effectually than has hitherto been "accomplished, and consists in employing Heilman's or other "combing machine for that purpose.

"Secondly, in making from the combed silk fibre, when spun, "a new fabric suitable for umbrellas and parasols.

"Thirdly, in mixing the aforesaid combed fibre with any desired "proportion of wool or mohair and spinning it into yarn."

[Printed, 4*d*. No Drawings.]

A.D. 1862, April 22.—N° 1167.

MONCKTON, Edward Henry Cradock.—"Improvements "in umbrellas, parasols, awnings, tents, and covering cloths, and "in waterproofing the same.

The materials used in the construction are made waterproof by passing them through a solution of wax, or of wax and resin, in hot oils; and then between rollers which express the greater part of the hot solution from the fabric, but leave in it a sufficient portion to render it waterproof, or by "adding solutions of gums "and resins to oil and wax melted together and applied as "above described." Or by steeping the fabrics "in a strong "solution of soap in water, to which alum is then added until "precipitation ceases," and pressing and rolling them "to incorporate the soap and alum into the body of the cloth." The waterproofed cloths may be ornamented by patterns printed on them "whereby they will preserve a gay and clean appearance "for a considerable time."

The inventor also applies to the stick of an umbrella a sliding piece with one or more spring catches in it, "which when slid

" forward will rest against a projection on the stick, and thus " form a support to the hand when carrying the open umbrella." " In lieu of spring catches a piece of vulcanized india rubber " may be inserted in the sliding piece."

Small funnels or tubes are applied to umbrellas to divert the water. Two instances are given of the mode of application, one by small funnels attached to the ends of the ribs; the other by a cover of oiled silk.

[Printed, 4*d.* No Drawings.]

A.D. 1862, May 16.—N° 1488.

DAVIES, George.—(*A communication from Richard Augustus Stratton*). — " Improvements in the manufacture of ribs for " umbrellas and parasols."

" The first part of the invention consists in hardening the strips " of steel wire used for the ribs of umbrellas and parasols by " passing the said strips while red hot at a uniform speed through " a hole in a trough containing water or other suitable fluid, a " constant stream of the latter being allowed to pass through " the said opening in contact with, and so as to surround the " strips of steel wire." In the machine described, the wire is passed alongside of a vertical row of gas jets which heat it to red heat and afterwards received by two rollers, from which it proceeds through the trough, passing out through a hole at the bottom of the trough, which allows a stream of water to escape with the wire and surround it as it falls.

" The second part of the invention relates to the construction " of the joints which connect the stretchers to the ribs of " umbrellas and parasols, and consists of a metal block cast to " each rib" " so as to form with the end of each stretcher, a " cheap and durable joint without weakening the rib." This block is cast on the rib by an ordinary type-moulding machine, the rib having been placed between two dies of the required shape. The block is made of type metal.

Tips are cast in the same way on the ribs, and this forms the third part of the invention.

[Printed, 8*d.* Drawing.]

A.D. 1862, May 28.—N° 1600.

COHEN, Charles.—" Improvements in walking, umbrella, and " other like sticks."

The invention consists in making and securing the handles of canes, or sticks, of all descriptions. The cane is split down about twelve inches, and the two split sides thinned a little towards their extremities. A wedge-shaped piece of wood or ivory is then glued between the two split sides, and the cane bent round to the desired shape.

[Printed, 8*d*. Drawing.]

A.D. 1862, May 29.—N° 1610.

CRITCHLEY, John.—" An improved rib fastener for umbrellas " and parasols."

The invention consists in the application of a sliding bush to the umbrella stick. The bush fits easily on the stick, and has a longitudinal slot with a branch slot at right angles to it, forming with a stud on the stick a double bayonet joint. A cupola-shaped cup is fixed to the bush. When the umbrella is closed the bush is lowered on the stick to enclose the ends of the ribs in the cup, and the bush is turned partly round to bring the upper branch of the slot on the stud which retains the fastener in its place.

" The stick may have a metal or other collar, on which the bush " may be made to work." " The improved rib fastener may be " modified by making both branch slots at the same side of the " longitudinal slot," " or the slot may be made in the stick, and " the stud attached to the bush;" " or the bush may be made " with a spiral slot or recess fitting on a stud or spiral projection " on the stick."

[Printed, 8*d*. Drawing.]

A.D. 1862, July 17.—N° 2043.

KURTS, Manilias.—" A new or improved material to be used " in the manufacture of handles for umbrellas, parasols, and " walking sticks."

This material is the "jambees cane," which in its natural growth has large round knots. One of these knots are cut through in a slanting direction, the half knots are joined together at right angles, and the joint is held by an iron pin. A crook is thus formed. The patentee claims the exclusive use of jambees cane for stick handles.

[Printed, 8*d*. Drawings.]

A.D. 1862, July 29.—N° 2147.

BOYLE, Arthur, and WARWICK, Thomas.—"Improve-
" ments in the manufacture of the ribs and stretchers of umbrellas
" and parasols, and in machinery to be employed in the said
" manufacture."

The ribs and stretchers are made " by means of rolls in grooves, " in the peripheries or cylindrical surfaces of which suitably formed " dies are inserted." A pair of rolls are employed, the circumference of each of which is equal to the length of the rib to be manufactured; if smaller dies are used a pair of dies are inserted " for flattening the notch end, and making the impression for the " hole, at the tip end of the rib, and another pair at a proper dis- " tance for flattening the notch ends and making an impression for the hole;" a third pair make an impression for the stretcher joint. When larger rolls are used, the tip ends of the two ribs are made together and the top ends together, the pair of rolls are geared together, and are adjusted to slightly flatten the wire through its whole length. By introducing the end of the coil of wire between the rolls, the wire is drawn through them, and several pair of dies of the required figure convert it into umbrella and parasol ribs; as the wire passes on, it is separated into lengths consisting of two stretchers joined at the flattened part from which the forks are made, the flattened part of the double stretcher is cut out, and slit into the form of two flattened forks presented to each other end to end; by binding up the flattened and slit ends the stretcher forks are formed.

[Printed, 10*d.* Drawings.]

A.D. 1862, August 21.—N° 2339.

BOUBÈE, Adolphe.—(*Provisional protection only.*)—" Appa-
" ratus for casting or moulding glass."

Moulten glass is poured into a mould, and compressed therein by a screw. Various objects are thus manufactured, including umbrella handles, which are made hollow by means of a mandril inserted in the mould. To represent polished stone, pulverised enamel is added to the glass when melted.

[Printed, 4*d.* No Drawings.]

A.D. 1862, August 22.—N° 2347.

HARRINGTON, Robert.—"Improvements in umbrellas and " parasols, and in the manufacture of parts thereof."

The "invention consists, first, of a particular arrangement of " the parts of a catch for holding umbrellas in the expanded and " closed positions, whereby such catches are rendered more efficient, " certain, and facile in their action, and relates to that class of " catches which hold by means of a nib or detent entering a small " hole or recess in the stick."

The catch lever, when keeping the umbrella or parasol in the extended position, "holds by the thrusting action in such a manner " that the greater the force applied to it consequent on the " position of the umbrella, the more securely it will hold. A " slight spring only is necessary for the catch lever, which is convenient " for handling, and answers all requisite purposes. The " same catch that holds the umbrella in an extended position also " keeps it closed, the catch nib or detent entering a small hole in " the stick at the proper point." The catch is applied to the runner, and the catch lever "and the part that carries its fulcrum." is made "of two gutter-like parts struck up in metal, the one " being soldered with its back to the runner, while the other " embraces its raised sides, and is mounted on a fulcrum carried " thereby." The raised sides are cut away to allow of the necessary movement of the catch lever, which, although free to rock on its fulcrum, is by its embracing sides prevented from moving in any other direction. The pin or detent nib is formed on the catch lever itself, "or a secondary lever may be used to operate the catch " lever or detent."

Another improvement consists in the particular arrangement and application of the spring to operate on the catch lever, which is formed of a small coil placed on the fulcrum pin.

Another part of the invention relates to improvements in making top notches and runner notches. Indentations are made to indicate the positions in which the nicks for the notches are to be cut.

[Printed, 8*d*. Drawing.]

A.D. 1862, August 28.—N° 2392.

COOKE, Grattan.—(*Provisional protection only.*)—"An im" proved apparatus for securing or fastening doors to prevent " robbery or intrusion."

The apparatus has the form of a walking stick, a handle being formed with a crescent, or "crutch-head," for the purpose of placing it beneath the handle of the door, the key, or the lock; the crutch head is a separate piece inserted into a hole in the upper end of the stick, and may be moved upward and downward. It is kept in its place by a pin through the upper end of the stick and any corresponding holes in the stem of the "crutch-head."

This apparatus may be used as a walking stick, but when required for continual use may be wholly made of iron.

[Printed, 4*d*. No Drawings.]

A.D. 1862, October 9.—N° 2721.

DULLENS, Hugo.—(*Provisional protection only.*)—"An im- " proved runner and fastening for umbrellas, parasols, sun shades, " and other like articles."

The improved runner has a rotating collar grooved and notched to receive the stretchers. By means of the rotating collar upon the runner the latter can be turned to any position upon the stick without twisting the frame, and a simple fastening with a small pin stud or screw may be substituted for the old spring catch at the top and bottom of the range of the runner. At each end of the rotating runner is "a swell or enlargement" of the tube with a number of notches. When the frame is open or closed the pin or stud in the stick at top or bottom passes into the swell through one of the openings, and then a partial turn of the runner secures it in the required position.

[Printed, 4*d*. No Drawings.]

A.D. 1862, October 11.—N° 2743.

VENNEDY, Augustine. — "An improved composition for " covering and forming the tips of umbrellas and parasols, also " applicable to covering the ribs and stretchers of same."

The ingredients employed in combining this composition for coating the ribs and stretchers, and forming the tips of umbrellas, " are paste, sealing-wax, shellac, sulphur, varnish," or substances of a similar nature. These substances are reduced to a "semi- " liquid or pasty consistence, and applied separately to the tips or " bottom ends of the ribs (which may or may not be made with a " projection) and to the ribs and stretchers." Linen, cotton, silk, or calico are stamped out to the required shape and applied by paste, varnish, and glue to the tips, ribs, and stretchers, after which the other materials may be applied as described. The composition may have any desired colour.

[Printed, 4*d.* No Drawings.]

A.D. 1862, October 16.—N° 2795.

DELMAS, FLORENTIN.—(*Provisional protection only.*)—" A rain " absorber."

This invention consists of a band made of sponges, and is intended to prevent the rain that runs down from hats and umbrellas falling on the wearer or those persons near him. This " rain- " absorber" is formed either of uncovered sponges, or of sponges covered and connected by any kind of textile fabric. The sponges are united by one or more cords passing through or round them. When the sponges are filled, they can be taken off and squeezed dry.

[Printed, 4*d.* No Drawings.]

A.D. 1862, November 3.—N° 2974.

STALLARD, WILLIAM HENRY.—" Improvements in umbrellas and parasols."

This invention relates to a mode of constructing these articles, so that an umbrella may be readily converted into a walking stick, and when collapsed occupy a much smaller space; the stick on which the umbrella is opened forms the case which contains it. The hollow stick is closed at one end with a ferule, and is fitted with a handle that opens upon a hinge, and is fastened by a " lock " snap and spring knob," or by a rotary collar with a groove and slot The umbrella frame and cover is made without any stick of its own, and folds into a much smaller space than when constructed with central shaft and runners.

In a second improvement the shoulders of the ribs and stretchers are attached to rings in the inside of a " cylindrical cage," the side bars of which have the length of " the run of the stretcher ring," which works within it. These ribs and stretchers are shaped so that the one encloses the other when the frame is folded. " The " umbrella stick or case at the ferrule end has an opening made " through it longitudinally, in which opening a metal pipe, with " a groove cut in the inside, is fixed. The lower end of the " spindle, which passes down through the hollow end of the

" cage, is cranked or turned outwards, so as to project a little " beyond the side of the said stem; and when it is required " to fix the umbrella frame to the top of the stick or case " for use, the cage stem is passed down the metal pipe, the groove " in which is traversed by the projection or cranked end of the " stem spindle to the bottom," where a "half turn secures it."

In a third modification a spindle is fixed on the end of the stick, which fits into the stretcher ring when the umbrella is to be opened, and the ribs are fitted with springs to open the umbrella.

[Printed, 8*d*. Drawing.]

A.D. 1862, November 18.—N° 3092.

RAPHAEL, JAMES.—(*Provisional protection only.*)—" Improve- " ments in umbrella, parasol, sun-shade, and walking sticks."

This invention has reference to the production of the preceding articles at a less cost, with a view " to render them neater and " stronger, and of a more serviceable description than at present." This is effected by "obtaining the same from any wood cut " from planks longitudinally with the grain in lieu of from " branches or offshoots of trees, and twisting or bending the same " in forming the handle or otherwise by steeping or soaking the " ends thereof firstly in a warm solution of soda and water, and " subsequently by means of heat applied thereto through the " medium of a jet of gas or otherwise."

[Printed, 4*d*. No Drawings.]

A.D. 1862, November 22.—N° 3142.

MISHORES, MICHAEL.—(*Provisional protection only.*)—" Im- " provements in the construction of handles for umbrella, parasol, " or other like sticks from soft canes."

A piece of wire is run through the centre of the cane longitudinally, and then bent half round at one end to serve for the handle, "a little of the extremities of the wire protrudes at each " end of the cane, and have a screw thread on it cut on them, " one to screw into the stick of the umbrella," and the other upon " an ornament to finish the end of the cane."

[Printed, 4*d*. No Drawings.]

A.D. 1862, December 10.—N° 3315.

CLARK, WILLIAM.—(*A communication from Jean Degivry.*)— " *Improvements* in umbrellas."

An improved umbrella and cane combined. The umbrella may be separated from, or applied to, an ordinary walking stick, which can then be used alone as usual.

"The handle or stick has no openings or slits made in it for "applying spring catches," which are dispensed with, so that the stick is stronger, simpler, and readier of construction. "2ndly, "the umbrella can never be turned inside out by the wind. "3rdly, it opens without difficulty by means of a peculiar arrangement of the ribs."

The upper part of the runner consists of a split tube, to which is screwed a nut "conically," so as to grip the stem by means of the split tube or runner, and in this manner the umbrella is fixed to the stick. The ribs are lengthened by means of a sliding joint and an additional stretcher. The catch which holds the umbrella open is fixed to a grooved ring, or by two ear pieces, "which "method of attachment possesses great strength;" the tail end of the catch is acted on by a spring, which maintains its hold of the catch on the sliding ring. The umbrella is held closed by springs in the sliding tube that grip the stick by the split ring, which slides freely on the tube, and has a slightly conical form for that purpose.

[Printed, 10*d.* Drawings.]

1863.

A.D. 1863, January 21.—N° 184.

BOUBÉE, Adolphe.—"Improvements in apparatus for casting "or moulding articles in glass and in imitation of precious stones "or marbles."

The "invention consists in the construction and use of moulds "formed in three or more parts, but by preference in three parts, "united by two hinges, such moulds having formed in them perforations," "so that portions of the molten glass, when blown "into them may be caused to protrude through the perforations, "and constitute curved projections on the surface of the article."

Also "in the use of an instrument in the form of a vice or "pincers, with suitably formed dies inserted in the jaws thereof, in "which the molten composition is inserted and pressed, and with

" a vertical rod or stem capable of adjustment as to height, in " order to make the requisite cavity in certain of the articles." The principal use of this instrument is to make door knobs, handles for umbrellas, and the like. The mould for this purpose has no perforations, but is formed of the shape required.

To make a composition resembling agates or other precious stones, a quantity of the stones are reduced to powder, and mixed with a proportion of potash and saltpetre. The mixture is then sifted, melted, and used in the same manner as glass.

[Printed, 8*d*. Drawing.]

A.D. 1863, January 27.—N° 234.

GILPIN, William, and HIATT, Josiah.—(*Provisional protection not allowed.*)—" Improvements in the fastenings of umbrellas " and parasols." " By means of a stud in the stick of the said umbrellas or parasols, and also of a groove or slot cut in a runner " revolving on the stick (and to which runner a notch carrying " the ribs of the said umbrellas or parasols is attached), a fastening is effected which holds the said umbrella or parasol in " position, whether the same be expanded or closed.

[Printed, 4*d*. No Drawings.]

A.D. 1863, March 20.—N° 743.

COUCHMAN, Richard.—(*Provisional protection only.*)—" Improvements in articles or means for supporting or carrying " ladies' parasols, bags, or other articles, or appendages."

This invention consists of an instrument of wire or metal of such form that it may be hooked over the waistband, while arms project in front capable of holding " a parasol, bag, or other " article," " the space between the two arms being secured by a " chain, ring, spring, catch, or otherwise."

[Printed, 4*d*. No Drawings.]

A.D. 1863, April 6.—N° 871.

HUGHES, Edward Thomas.—(*A communication from Léon Sestier.*)—(*Provisional protection only.*)—" Improvements in machinery or apparatus for manufacturing the ornamental tips of " parasols, umbrellas, and similar articles."

"A cutting machine is employed, consisting of a bench, to " *which is* fixed a pair of shears worked by the foot," and a graduated scale adapted to the different sizes of umbrellas. 2. There is also a machine "for planing and squaring the part " to be worked on three sides." A cutter is fixed to a plate at an angle of 45°, and arranged to receive two other cutters with blades at right angles with the first. In front of these cutters, a " square" is placed that carries a rod encircled by a spring resting on a bracket forming part of an iron crosspiece fixed to the plate; the square is placed in a groove in the crosspiece, and according to the pressure on it gives more or less pressure to the tools. A swing lever, jointed on pivots, carries a clip, having a slide and groove to keep the tip, while in formation, in a fixed direction; the slide, raised or lowered by a nut, gives more or less pressure on the square. On the side of this lever a pin catches a hooked lever that is mounted on a moveable iron bench that slides to and fro, "being no other than a plane arranged to plane the " tip on three sides when it is placed between the square and " the groove of the slide." On the bed of the machine is fixed " a pair of pincers having an additional arm jointed to each of its " ordinary arms," and that also is jointed to a ring, so that the more the ring is pulled the closer the pincers are pressed.

A strap fastened to the ring of the pincers encircles a cylinder moved by two other straps, and passes round a second cylinder moved by a crank or speed pulley. The second cylinder moves the straps that turn the first cylinder, which moves the strap of the pincers and the sliding frame to which they are connected, until the frame runs against a stop, which alters the motion of the cylinder, opens the hooked lever, relieves the tip, and by means of a weight and cord gives a return movement to the pincers, takes them back to the cutters, and catches hold of another piece to be operated on.

By means of a weight and chain attached to a lever the planing is caused to be of a conical shape.

"This system includes a machine for drawing and straightening, " which differs only from that of the planing and squaring machine by a system of pressure instead of by plate and cutters."

Three pressing tools, placed in three grooves, are regulated by pressure screws, and "instead of the slide and groove there is a " piece of metal which fills up the space occasioned by the action " of two of the tools."

To stretch or elongate the tip, there is a block of cast iron intended to receive four cylinders, "to which are adapted bevil " wheels at right angles, in such a manner that the four cylinders

" turn when the first cylinder is put in motion." The tip is guided between these cylinders, and four cutters are " employed " to cut off the angles or sides."

There is also a machine for squaring the edges of the tips by actual pressure. Two iron frames are employed, at right angles, with a support for centreing the bearings of five shafts, two vertical and three horizontal. The middle horizontal shaft drives the others, so that when " an unfinished tip " is " placed between " the two straight edges, the tip receives a lateral pressure as well " as a vertical pressure."

To turn the tip and ball, the form of a cone is first given the tip in a lathe, by a tool with a conical aperture containing a cutting edge, and the tip is afterwards finished by a T-shaped tool " having a nut at the end of the rod, and holes at the end " of the crosspiece perfectly square with the rod. The head is " countersunk in front to receive and hold the prepared end of " the unfinished tip, and two pieces of metal are fitted to a joint " held in clips, jointed to the holes in the end of the crosspiece. " These two pieces are countersunk the form of the cone with its " ball." " The tool, of a T shape, is placed in the mandril, then " the nut is so fastened that the rod can have a to-and-fro movement." Other articles may be turned in the same way.

[Printed, 4*d*. No Drawings.]

A.D. 1863, June 11.—N° 1452. (* *)

KAIN, JOHN FRANCIS.—(*Provisional protection only.*)—" Improvements in umbrellas, parasols, sunshades, walking sticks, " and whips, and in brooches and other ornaments." The stick or handle is made telescopic; the lower portion is of wood, ivory, or other material, " hollow to the required length," and with the inside surface smooth or lined with a smooth substance. The upper or sliding portion is of cane or similar material; " it is prevented from sliding too far in by a suitable stop," At the end of the handle portion is a recess in which is placed " a perfumed " or perfuming agent in a pasty, solid, or semi-solid state." The recess is covered by a cap " formed with perforations or small " orifices." This method " of applying and retaining perfume " may be applied to brooches and other ornaments for personal " wear."

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 21.—N° 1826.

VANNER, James Engleburth. — "Improvements in the "manufacture of umbrellas and parasols."

According to this invention "the production of a 'leisure' for "and the making of a hem are dispensed with, and although the "production of a tobine border or an invisible border may be "dispensed with in carrying out my invention, it is preferred in "all cases that one or other thould be produced near to the edge "of a silk fabric to be used in the making or covering of an "umbrella and at the edge where the 'leisure' has been hereto-"fore produced additional warps are employed in order to obtain "such an additional strength to the edge as to admit of the dis-"pensing with the making of a hem when covering an umbrella "with such a silk fabric, and at the same time produce a finish "at the edge, which will allow of the hem being dispensed with "without deteriorating the character of the article. And in place "of weaving the edge of an umbrella or parasol silk fabric, or that "part thereof where the hem usually comes of the same tie or "pattern as the body of the fabric, that portion or a part thereof "is woven more or less of a different tie or pattern, and is woven "with harness leishes or cords capable of more or less separate or "independent action from that used for producing the body of "the fabric. It is prefered in all cases that the additional "warp used at the edge should be richer than the additional "warp used in producing a tobine border or an invisible border "near the edge of the same fabric. The general body of the "fabric may be of plain or tabby weaving, or of a twill."

[Printed, 4*d*. No Drawings.]

A.D. 1863, July 27.—N° 1867.

PAIN, Joseph.—(*Provisional protection only.*)—"Improvements "in the manufacture of umbrellas and parasols."

The object of the invention "is to dispense with the ordinary "hand or machine hem of umbrellas and parasols;" it "consists "in weaving an extra thickness in the edge or 'leizure,' in addi-"tion to the ordinary extra thickness termed the 'invisible' "border, and in weaving on or in the invisible border, or on or "in the ordinary silk or other material, when there is no invisible "border, one or more rows of plain or fancy stitches in imitation

" of and as a substitute for the ordinary hand or machine hem " or stitch."

[Printed, 4*d*. No Drawings.]

A.D. 1863, August 1.—Nº 1911.

VANNER, James Engleburtt.—" Improvements in the manu- " facture of umbrellas and parasols."

These improvements refer to the fabric of which umbrellas are made. Into the edge of the fabric are introduced silk warps to give it strength and finish, so that neither a " leisure " or a hem is required. Or different harness is used to produce a different tie by which the same end is attained.

Silk warp is used for the selvage, and " the substance of warp " in the selvage should be about 3 to 1 of that in the main body " of the fabric."

[Printed, 4*d*. No Drawings.]

A.D. 1863, August 6.—Nº 1944.

CHARAGEAT, Gabriel Emile.—" Improvements in the " construction of frames for umbrellas and parasols."

The invention consists in cutting thin bands of steel lengthwise in passing them through a shaping frame, and so imparting to the steel band a double parallel body, round or tubular, united at the middle of the breadth of the band which secures the two longitudinal tubes. To unite the ribs to the nut, the end " may be fixed " to the nut by a simple tenon made between the two tubes after " having slightly rounded the rib so that its end may with facility " enter the nut ;" or a tenon composed of a band of metal has its end submitted to pressure by a tool, which gives it the form of the rib ; the tongue is then folded, so that a collar is preserved for the passage of the wire which holds the ribs to the nut ; to fix the tenon to the end of the rib, a pin is passed through the whole and riveted, which forms a solid connection. The same method may be adopted for the forks. In joining the forks to the ribs tenons are riveted to the ribs instead of being soldered. The lower end of the rib is compressed to receive a tip, " which adapts itself " firmly without any external projection." When the handle is required to be lengthened, a grooved tube is used, having another tube with corresponding grooves working within it. A catch with a spring holds the tubes when drawn out, and a spring catch within the inner tube also holds the runner.

[Printed, 10*d*. Drawing.]

A.D. 1863, September 16.—N° 2273.

THOMSON, Robert.—(*Provisional protection only.*)—" An " improved mixed fabric, and in the application thereof to covering " umbrellas and parasols."

" The invention consists, first, in an improved fabric to be made " by employing a warp of silk and weft of polished or 'lustre " 'finished,' thread (instead of in its unfinished state), these are " to be woven together in the same and well known manner as " fabrics composed entirely of silk, either twilled or plain, and " not to be woven or combined so as to form a cotton back and " silk face as hitherto in the manufacture of 'serges,' for instance. " A second part of the invention consists particularly in the " application and adaptation of the fabric so produced to the " covering of umbrellas, parasols, or 'sun shades,' as a substitute " for fabrics composed entirely of silk, the advantages derived " from the combination of 'polished weft' and silk are, that the " appearance is equal to silk, and the fabric is not more bulky, " but is more durable and less expensive."

[Printed, 4*d*. No Drawings.]

A.D. 1863, September 16.—N° 2275.

HARRINGTON, Robert.—(*Provisional protection only.*)— " Improvements in umbrellas and parasols, and in parts thereof."

Improved means whereby the entire stick and handle may be readily taken out of, or put into the frame or cover. Instead of riveting the top notch to the stick, one or more spring bolts are attached to the barrel part of the top notch, which bolts into a socket in the stick, holding the frame and cover securely to the stick or handle, when used as an umbrella; but by raising the bolts of the top notch and of the runner, the stick may be instantly withdrawn from the frame and cover, or replaced.

The centre of a brass disc is raised into a socket, and by cutting out the crown, the tube of a top notch is produced. Radial notches are cut as usual, and then the parts of the rim between the notches are bent alternately up and down. The " tying-in " wire " is attached to these divisions.

[*Printed*, 4*d*. No Drawings.]

A.D. 1863, September 19.—N° 2309.

COUCHMAN, RICHARD.—" Improvements in articles or instru-" ments for supporting, holding, or carrying parasols, bags, " watches, ornaments, or other articles or appendages."

" This invention consists in attaching to the waistband, belt, or " other suitable part of the dress an instrument so formed as to " be suitable for receiving and holding a parasol " or other appendage.

The instrument may be of various forms and materials, but the main principle is thus described:—A clip passes over the waistband, and one end catches into a hook in the other end, or one end has a sharp point, and is fixed into the dress like a brooch pin. To this another spring clip or holder is attached for suspending any article to.

Various shapes which the instrument may assume are given in the drawing, but they are all modifications of the principle above described.

[Printed, 8*d*. Drawing.]

A.D. 1863, October 7.—N° 2451.

CADDICK, JOSEPH.—(*Provisional protection only.*)—" Improve-" ments in the manufacture of runners, runner notches, and top " notches for umbrellas and parasols."

A circular disc of sheet iron, or alloy, is raised by dies worked in presses into a tube closed at one end; this tube is placed with its open end downward upon a fixed die that has a conical opening in its axis; a flat punch, acting upon the closed end of the tube, forces the greater part of it through the die, and elongates and reduces it in diameter. That part of the closed end, which is left of the original diameter, constitutes a flange of which the runner notch is made, and is afterwards converted into a double flange. Grooves are cut in the flanges, which are converted into a notch; the closed end of the runner is pierced, and the runner finished in the usual way While raising the runner it is annealed from time to time. In making runners from the runner notches it is only necessary to solder tubes to the notches having the required length.

[Printed, 4*d*. No Drawings.]

A.D. 1863, October 8.—N° 2469.

WATSON, ROBERT GREEN, and KENDALL, WILLIAM JOHN.—(*Provisional protection only.*)—" An improved walking-stick " *umbrella.*"

The invention consists of a combined walking-stick and umbrella. It is made with a slight metal frame covered with silk, the stick is quite straight, and the handle has the form of a knob. The umbrella is enclosed in a light metal case, which has the form of a walking-stick, its lower end having an opening, through which the ferule or point of the umbrella projects. The upper end of the case has a hinged lid, closed by a spring, which shuts over the knob of the stick, forming in appearance an ordinary walking-stick. When the umbrella is wanted the hinged lid is opened, and on pressing the ferule of the umbrella upon the ground the knob will be forced upwards from the mouth of the case, and the umbrella then be easily withdrawn for use.

[Printed, *4d.* No Drawings.]

A.D. 1863, October 9.—N° 2475.

ELSOM, Joseph.—" Improvements in parallel turning, and in " machinery for that purpose."

This invention is for the purpose of turning, amongst other things, umbrella handles. A revolving cylinder has within it a stationary cylinder which carries the wood to be turned. At one end of the revolving cylinder are fixed a chuck and cutters which act upon the wood as it passes along the internal stationary cylinder. A second stationary cylinder receives the wood after turning, and suitable feeding gear is arranged to supply the wood to the machine.

[Printed, *1s.* Drawings.]

A.D. 1863, October 20.—N° 2577.

RESTELL, Thomas.—" An improved construction of walking-" stick umbrella."

The " construction is simplified and their stability ensured " in " their transformation from a walking-stick to an umbrella." The case or hollow stick is formed of " semi-hard vulcanite " brought to shape by coiling a strip of the compound, when in a soft state, around a steel mandril, and submitting it to heat in the usual way. This elastic cylindrical case is not liable to be split. The stick is closed at one end by a handle, and the runner is free to move on the rod, and is held in its position by the usual spring. The runner moves upward to close the umbrella. The stretchers are jointed to the runner and ribs as usual. A spring fastening couples the case and umbrella together; the runner has a second or supplementary notched guide wheel placed below the notched wheel previously used, which does not interfere with the closing of the umbrella.

[Printed, 10*d*. Drawing.]

A.D. 1863, October 24.—N° 2631.

HANNART, Louis Joseph.—" An improved clasp or fastening " for gloves or other wearing apparel, for umbrellas, travelling " bags, or other similar objects."

" This invention relates to an improved clasp " for gloves, umbrellas, &c. The clasp consists of two parts; one part formed of " a projecting button with a round, convex, or mushroom- " shaped top; whilst the other part " " consists of a small hollow " ball, provided at the under side with a circular opening," through which the button passes, and is caught by the edge of the ball. " The hollow ball may be replaced by a hollow part of " other suitable shape," such as a ring or similar arrangement.

[Printed, 6*d*. Drawing.]

A.D. 1863, November 14.—N° 2850.

LYTTLE, William Alexander.—(*Provisional protection only.*) —" Improved covers for umbrellas, parasols, or sunshades."

Instead of stitching the edges of the material together, the necessary seam is produced by causing the edges to adhere, one to the other, by some adhesive composition. The mouth of the bag may be contracted by a ring or by the cement. Instead of making the envelopes in the shape of a bag or cylinder, they may be made of a band of the ordinary material " formed with its smaller or point " end as a cylinder " to slip on the umbrella stick. The band is then wound throughout the remainder of its length spirally round the umbrella. The band may be permanently connected to the umbrella.

[Printed, 4*d*. No Drawings.]

A.D. 1863, November 20.—N° 2916.

PEZOLD, Ernst.—(*Provisional protection only.*)—" An improved " pipe stick."

This implement can be smoked from either end. The pipe stick or stem consists of two parts, the actual stick, and the handle, which forms the pipe bowl and is lined with clay or meerschaum. Between the bowl and mouthpiece is a piece of wood with a screw which screws into the top of the stick. The inside is "turned "out sufficiently large to admit of a cylinder being inserted, "round which the smoke circulates" and is cooled, previous to its entering the mouth. The handle is of ivory, or other material, having the shape of a crutch. The stick is formed from any ordinary walking stick. The pipe may be smoked from the handle, or ferule end of the stick, a small plug being made to fill up one hole when it is smoked by the other. When the pipe is short the handle can be unscrewed and used as a pipe by itself.

[Printed, 4*d*. No Drawings.]

A.D. 1863, November 26.—N° 2977.

CHESTERMAN, James.—"Improvements in frames for um-"brellas and other like articles, and petticoats or skirts."

This invention consists in constructing the umbrellas with an additional hinged V-shaped frame, carried between every two ribs in the ordinary frame, and being hinged to a slide free to slide on the rib. The ends of the V are hinged to a slide on each rib, and the two legs are also hinged to each other at the point "where "they come near to the edge of the covering of the umbrella;" and they are passed under a loop "which retains the point of the V "midway been the ribs and close to the covering." When the umbrella is closed the legs of the V come together in a similar manner to the ribs, and add very little if at all to the size of the umbrella.

The remainder of the Specification relates to the construction and modifications of petticoats, skirts, and crinolines. Five modifications are described.

[Printed, 10*d*. Drawing.]

A.D. 1863, December 2.—N° 3022.

LUBLINSKI, Robert.—(*Provisional protection only.*)—"A "new method of bending the reverse ends of partridge canes, "and bending partridge canes without roots."

Instead of using only the root end of the cane for the handle, the reverse end of the cane is bent. To effect this a metal semicircular tube about six inches in length is placed on the part of the cane to be bent, and both are placed in a vice, heat by gas is applied, and when tube and cane are sufficiently heated, the cane is bent by a handle attached to the tube.

[Printed, 4*d.* No Drawings.]

1864.

A.D. 1864, January 6.—N° 40. (* *)

TRACY, John Ibbetson, and TRACY, Henry George.—(*Provisional protection only.*)—" Improvements in the construc-" tion of umbellas, parasols, and sun-shades, part of which " improvements is applicable to whips, canes, and other like " articles." In order to produce " a more sightly joint " for the stick or stem, the divided parts are united by " a kind of bayonet " joint fastening," a slotted metal tube being inserted into a hollow in the lower part, and " a pin of a jointed coupling " being permanently secured to the upper part. An improvement in the top " consists in providing a pin or rod (which forms a continua-" tion of the stem) for the top runner and ferrule to slide upon," the runner and " ferrule " being connected together and forming one sliding piece.

[Printed, 4*d.* No Drawings.]

A.D. 1864, February 17.—N° 410.

WEEKS, John.—(*Provisional protection only.*)—" An improve-" ment in parasols and other like articles."

The " invention consists in ornamenting the lining or inside of " parasols, sun shades, and the like, by the application thereon of " braiding, chenille, and other fancy trimming."

[Printed, 4*d.* No Drawings.]

A.D. 1864, March 5.—N° 561.

DANGERFIELD, William.—" An improved mode of, and " apparatus for bending wood for the handles of walking sticks, " umbrella and parasol sticks, and other purposes."

This improved method of bending wood into a hook or curved shape for the ends of walking and umbrella sticks, consists in a novel way of applying heat to soften the ends or fibres of the sticks that are to be bent, by placing them in moist sand (which may be heated) and afterward removing them to the bending apparatus. That end of the stick which is to be bent is held in the jaws of a clamp, and the extremity is drawn round or bent over a tube, or hollow mandril, provided with an annular or half round recess; the diameter of the mandril corresponds with the curve to be given to the stick, and the groove is of a size to suit the diameter of the stick. Inside this hollow mandril a gas jet, or burner, is introduced. The stick is kept in its bent position by a band of steel bent over it, and in contact with the stick, which has a handle at one end for operating with, and at the other end a stud for carrying a catch, or hook, "which drops over the handle " of the steel band when the same is lapped round the mandril." Heat may be applied externally also to the stick by causing a jet of gas to play on the steel band. When the handle of the stick has remained in the hollow chamber so long as to have received a permanent set it is withdrawn from the apparatus.

[Printed, 10*d*. Drawing.]

A.D. 1864, March 31.—N° 799.

KURTS, Manilias.—(*Provisional protection only.*)—" A new " mode of attaching and applying an almanack or a thermometer " to the handles or other parts of walking sticks, and to the " handles or sticks of umbrellas, sunshades, and other similar " articles."

The almanac, of any convenient size, is attached to two spindles which are placed in the stick. The spindles are actuated by small toothed wheels, so that they can be made to show the proper date.

A thermometer may be fixed in a similar manner, but so as not to be moveable.

[Printed, 4*d*. No Drawings.]

A.D. 1864, April 1.—N° 813.

AMBROSE, Edward. — (*Provisional protection only.*) — " Im- " provements in the manufacture of umbrellas."

The object is to enable the umbrellas to be folded or doubled together in a small compass, or about one-third of their length. The ribs have a joint or hinge near the middle of each, the joints being covered by a ferule that fits the rib and holds the two parts firmly together in one length. A wire attached to each ferule passes upward through a small wheel, and is connected to a ring above the wheel, which when pulled moves the ferules from the joints in the ribs, and allows them to be folded back; or the springs are put through a ring below the wheel, and then attached to the runner, "which when pulled will also move the ferrules "from the joints in the ribs." A small piece of spring wire encircles the rib, meets the stretcher and pushes the ferule over the joint when the ribs falls into its place from its doubled position. The stretchers may have an elbow joint (only to close one way) with or without a ferule, and spring as with the ribs. There may be different handles to double up in three or more lengths; the joints may be covered with a long ferule made smooth that the runner may pass over them, or worked with a spring like the back of a pocket knife, or screwed together and coupled with a string.

[Printed, *4d.* No Drawings.]

A.D. 1864, May 9.—N° 1175.

HAIG, WILLIAM GILLUM.—(*Provisional protection only.*)—"An improvement in umbrellas."

The aim of this invention is to produce an umbrella that may be removed from or placed on a stick at pleasure, that it may be used either as a walking stick or as an umbrella stick.

The ribs and covering are separate from the stick, but may be combined. The ferules or collars to which the stretchers and ribs are connected are of india-rubber; or if the collars are made of metal, holes are drilled in the stick for pins passing through the collars, and the holes in the stick, to retain the collars in their position. When the upper collar is of metal the lower part of it has an india-rubber washer. Collars of india-rubber are retained at certain parts of the stick, by enlargements or projections on the stick; or the collars have springs inside that catch into small recesses in the stick; or springs are placed on the stick to catch into the collars.

[Printed, 4d. No Drawings.]

A.D. 1864, June 10.—N° 1441.

HUGO, William, and DOMEIER, Albert.—" Improvements " in the manufacture of umbrellas and parasols."

The ribs have a peculiar section of metal, usually of steel, so that greater strength may be obtained with the same weight of metal. The ribs are produced by drawing between dies or rolling, or by a combination of these processes, and are such as to give a considerable breadth of surface for the fabric to rest upon; the rib being nearly flat at this part, but at the under side of each rib is a longitudinal web made by bending in the middle the metal of the rib, so that the web may have double the thickness of the parts which come against and support the fabric; the ends of each rib are flattened to be fixed to the top notch and fabric; the outer end where the latter is fastened has an eye and a knob "fixed " by shutting them in the folded parts of the metal."

[Printed, 10*d.* Drawing.]

A.D. 1864, June 17.—N° 1508.

BOWRA, Matthias Edward.—" Improvements in tubes and " caps made of india-rubber or other known elastic gum, and in " their application."

These tubes may be used to cover walking and umbrella sticks, wholly or partially, or to cover the knobs or handles. They are made "somewhat less in their inner diameters" than the sticks, and "are drawn over the same so as to clip" them. Their adherence may be increased by glue.

An improved cap for umbrellas is made "in the form of a " nipple with a hole in the centre, or in the form of a tube with a " funnel mouth." This is slipped over the ferule end of the stick and over the rib, so as to enclose their ends.

Other uses for these caps are mentioned.

[Printed, 4*d.* No Drawings.]

A.D. 1864, June 29.—N° 1625.

DUFFY, Thomas.—" An improvement in umbrellas, parasols, " and sunshades."

The invention consists in using a spring, catch, or fastening composed of "a lever working in a recess in the handle, which " recess also contains" a spring. The projecting part of the lever works through a slot in the runner and by a thumb piece on the lever; when pressure is applied to the thumb piece, the projecting end is forced inward; this releases the runner, and allows its being slidden along the handle; on the pressure being discontinued, the spring forces the lever outward, and the projecting piece passes through the slot in the plate and runner and holds the latter in position.

[Printed, 6*d*. Drawing.]

A.D. 1864, July 14.—N° 1761.

WHITE, William.—(*Provisional protection only.*)—" Improve-" ments in umbrellas and sunshades." These umbrellas and sunshades are made to be folded up, and can be packed into a carpet bag, or carried in the pocket. "They are also capable of " being adjusted on a walking stick without the use of springs, " and cannot be turned or damaged by the wind." Each rib has in the middle a " stop back joint " which allows the ribs to fold in an outward direction in the middle of their length, but retains them in a straight line rigidly in the opposite direction. The runner is moved up the handle to collapse the umbrella and downward to expand it; " the covering folds itself up to just half the length of " the rib. The handle is telescopic with two or more sliding " pieces." " In the interior of the ferrule and slide, a spring is " fixed somewhat in the line of the stick " " and regulated or acted " on near the upper end by a small thumb-screw, so as to fix to " different sizes of sticks."

[Printed, 4*d*. No Drawings.]

A.D. 1864, July 15.—N° 1777.

WEEKS, John.—(*Letters Patent void for want of Final Specification.*)—" Improvements in umbrellas and other like articles."

The invention consists in connecting the upper notch to a metal tube, and fitting the lower end of the tube to the top of the stick "which must be carried up beyond the point to which such " runner " " may rise in order that such runner may travel on the " stick." " The stick should be tapered off to make a neat joint," which is covered with a ferule; by using the tube the diameter of the notch is reduced. Although the tube is preferred, the same end may be effected by tapering the upper end of the stick, "from " *a point above* that to which the stretcher runner can ascend to

" that point where the upper notch is fixed;" an upper notch " may be used of the same diameter as the stick. A recess is " provided in the stick to receive the stretcher joints.

[Printed, 4*d*. No Drawings.]

A.D. 1864, August 25.—N° 2103. (* *)

NEWTON, ANN.—(*Provisional protection only.*)—" An improved " apparatus for receiving or holding clothes, ornaments, or other " articles," consisting " of a chamber or receptacle in which is a " column, pillar, rod, bar, frame, or stand capable of revolving " wholly or partially round, and carrying hooks, trays, or other " appliances," for holding, amongst other articles, umbrellas. The chamber, mounted on castors or rollers, is made either with sides and a door, or of framework provided with draperies; or the framework may be constructed " of tubular metal rods jointed " or connected together" so that it can be readily taken to pieces.

[Printed, 4*d*. No Drawings.]

A.D. 1864, September 7.—N° 2188.

CLARK, WILLIAM.—(*A communication from Jean Baptiste Dellestable.*)—" Improvements in the construction of the frames of " umbrellas and sunshades."

The peculiar feature of the improvement consists " in making " the ribs with a broad surface" " on which the silk or other " covering may rest." They are " of ribbed form in section," and " serve to directly strengthen the surface of resistance of the " rib, or in other words are in a plane parallel with the surface of " resistance." The ribs will fold up close to the handle, and are kept from twisting or interlocking on opening the umbrella.

A number of figures of sections for ribs and stretchers are given, cylindrical, triangular, **M** shaped, square, and other.

[Printed, 8*d*. Drawings.]

A.D. 1864, September 9.—N° 2205.

RESTELL, THOMAS.—" Improvements in umbrellas."

The object of this invention is to improve the construction of walking stick umbrellas. The invention is an improvement upon one patented October 20, A.D. 1863, No. 2577. The umbrella is improved by "extending the sheath to the same proportionate distance with respect to the handle and ferule that the "cover of an ordinary umbrella extends," and showing "portions "of an ordinary stick projecting from either end, the one to "receive the ferule and the other (which is secured to the case) "to carry the handle." To the upper end of the case, and surrounding the stick, "imitation tips" are fixed "which will give "the appearance of the ribs projecting slightly beyond the case." "The top spring is now set to snap above the runner." To fasten the umbrella to the case the spring fastening is fitted in the stick above the real tips of the ribs, and snaps into a notch in the case when the umbrella is mounted. The handle is hollow, and has a tube of cork or india-rubber to receive the point of the umbrella. On one of the ribs is an elastic band to keep the umbrella from falling open when temporarily shut.

[Printed, 10*d.* Drawing.]

A.D. 1864, November 12.—N° 2823. (* *)

CADMAN, Charles Shirley—(*Provisional protection only.*)—"An improvement applicable to whips, umbrellas, and parasols, "and walking sticks, and canes." These articles are made with "detachable handles:" the end of the stick is fitted with a slightly conical plug, which "carries at its end a strong socket pin "for giving steadiness to the joint, and from this pin projects a "short stud." The handle is formed with a metal socket, which is slotted to make with the stud a bayonet joint.

[Printed, 4*d.* No Drawings.]

A.D. 1864, December 6.—N° 3037.

STEPHENSON, John.—(*Provisional protection only.*)—"Improvements in umbrellas, parasols, and sunshades."

The invention "consists in a small hollow cap" made of metal. The upper portion of the hollow is made with a female screw to fit a corresponding screw on the end of the umbrella ribs, and the lower portion made large to embrace the covering, which is secured by "pinching the cap." The cap may also be of india-rubber. Also the fabric is made thicker and stronger in the fold between the ribs by means of a strip of a waterproof substance attached on the inside between the ribs.

[*Printed, 4d.* No Drawings.]

A.D. 1864, December 28.—N° 3220.

JOHNSON, Henry.—"Improvements in the manufacture of "top-notches and runners for umbrellas and parasols."

The invention consists in forming top-notches and runner-notches from sheet metal by dies and pressure. The process commences by taking a circular disc of metal, and by means of dies raising the disc into the form of a conical cup, and by other dies forming a shoulder on the cup, the lower part being made of less diameter than the upper part, and a shoulder formed at the junction; the open end of the cup is then smoothed by turning in a lathe, and placed in the lower die or bed, and the open part is "cupped in," or partially closed, until it is nearly contracted to the diameter of its lower part; the upper part of the cup being thus of a conical figure. A flat-faced tool with a circular recess made in it a little larger than the open mouth of the cup, is brought down upon the cup, in the die, the upper part of the cup being made cylindrical and a flange formed in the plane in which the shoulder is situated. By other pressing dies the mouth of the cup is opened and turned out into a plane parallel to that in which the flange is placed. The cup has now nearly the figure of a top-notch, and only requires the closed bottom to be punched out, and a series of notches cut across the double flange, to constitute it a top-notch.

To manufacture a runner the cup is made so deep that the tubular part is sufficiently long for the tube of the runner; or a tube is soldered to the notch.

[Printed, 8*d*. Drawing.]

1865.

A.D. 1865, January 13.—N° 114.

WEEKS, John.—"Improvements in umbrellas and other like "articles."

The upper notch is connected to a metal tube of less diameter than that of the stick, and the lower end of the tube fitted to the top of the stick, which is carried beyond the point to which the runner carrying the stretcher may rise. The stick is tapered off and the diameter of the notch is thus reduced, so that the thickness of the umbrella is less there than at any other part. The same end is attained "by tapering the upper part of the stick "from a point above that to which the stretcher runner can ascend, "to that point where the upper notch is fixed." The notch may then have the same diameter as the stick.

In the second part of the invention the stick is formed with a recess for the reception of the stretcher joints, which are of different lengths and fitted to a runner with two or more notches. The joints of the stretchers and the ribs will come at different parts of the length of the stick, which has grooves in it for the stretchers and ribs to rest in. A runner is used to travel in the grooves of the stick, or a metal tubular stick with the runner inside. Slots are formed to allow of the stretchers being connected to the runner and to play up and down the stick. For the spring catches, a spring stud or button is substituted, which enters a hole in the runner, and retains it until the runner is released by depressing the button.

[Printed, 8*d.* Drawing.]

A.D. 1865, March 10.—N° 682.

JONES, Joshua, and JONES, Richard Daniel.—(*Provisional protection only.*)—"Improvements in apparatus used for "bending the ends of walking sticks, and the sticks or handles "of umbrellas and parasols."

"A form or solid block" is made to the curvature desired to be given to the bent end of the stick, and of a size to have several sticks bent on it at once. A flat chain is used with the block, which has grooves on its surface, each groove being arranged to receive a stick, so that the end of each stick about to be bent, is partly embraced by the groove on the surface of the flat chain; the block also is made with grooves, and the jaws of a vice in which the stick are held when bending their ends are grooved, and the block is attached to it. The ends of the sticks to be bent are first softened by inserting them in damp warm sand. The sticks inserted into the vice are held at such a distance from their ends as is required to form the desired length of bend. The chain at one end is fixed to the vice, and at the other end to a lever handle, which bends the chain and ends of the sticks on the block, and the chain "supports the grain of the wood at the "outer surface." The end of the chain is connected to the lever and is adjusted by a screw, and the lever "is retained by a lever hooked catch;" the block is solid and kept heated on its surface, and the heat is communicated to the jaws of the vice, which dries the sticks; the block may be made to bend one stick at a time. It is not essential to heat the block, as the operation may be performed when the blocks are cold; heat is applied to the block for setting, hardening, and drying the sticks previously moistened.

[Printed, 4*d*. No Drawings.]

A.D. 1865, March 24.—N° 833.

LUBLINSKI, Robert. — "Improvements in umbrella and parasol tip fasteners."

The object of this invention is to allow the silk or alpaca of the umbrella to dry without the necessity of its being left open. A piece of metal tube, about two inches long, is fastened to one end of a metal shield or plate where the elastic passes through, and to the other end is fastened a piece of elastic which passes up and down the tube "to let in as much elastic as will be found necessary to stretch round the tips of the umbrella." In some cases the elastic is inserted in a small coiled tube which is inserted in the stick of the umbrella, or it may be fixed outside the stick, the top being ornamented.

When the umbrella is wet, all that is required is to pull the end of the elastic, which will then pass round the tips of the umbrella, and catch in a click, leaving the silk free to dry.

[Printed, 4*d*. No Drawings.]

A.D. 1865, March 31.—N° 918.

MACE, Thomas Kemp.—(*Provisional protection only.*) — "Improvements in fixed bands or rib holders for umbrellas and parasols, and which said band is also applicable as an ornamental appendage to walking sticks and other purposes."

This invention relates to a construction of band or cap to cover and hold close to the stick the tip ends of the ribs by applying the band or fastener to the outside of the parasol covering as in the usual way. A bit of elastic is secured to the fabric of the covering by a metal or other eyelet, with or without washers, while at the other end is a projection, so that when the band is drawn round the umbrella the projection falls into the cavity of the eyelet, and secures the ribs and covering so that no projections can be seen. The improvement " for confining and holding the " tip ends of the ribs radially around the said stick, consists of an " india-rubber cap secured to the stick, but capable of being re- " versed when closing the umbrella," " and passing down over, " and confining them when closed."

An elastic with or without " a metal collar clip, ferrule, or other " means," or a short chain is also used to secure the ribs. These inventions are also applicable to walking sticks.

[Printed, *4d.* No Drawings.]

A.D. 1865, May 10.—N° 1302.

HADFIELD, Robert, and SHIPMAN, Jabez.—(*Provisional protection only.*)—" Improvements in metal ribs for umbrellas " and parasols," by making such ribs of double tubular formation instead of single tubes, or trough-like forms as heretofore.

Flattened steel wire or strips of sheet steel, of varying thickness, length, and width, are passed through metal rollers or other shaping frames, thence through metal dies or wire drawing " wortles " of the shape required so as to bend or turn over the edges of the strips or flattened wire, whereby the double tubular form is imparted to the ribs; they are then passed through heated metal plates to straighten, harden, and temper them in the usual way.

[Printed, *4d.* No Drawings.]

A.D. 1865, June 5.—N° 1529.

STEPHENSON, John.—(*Provisional protection only.*)—" Im- " provements in umbrellas, parasols, and sunshades."

This is " an apparatus to be attached to the ends of the ribs of " umbrellas, parasols, and sunshades for securing the edge of " the silk, cotton, alpaca, or other fabric " with which they may be covered. A hollow cap, formed of metal or similar material, and ornamental in shape, is made with a female screw to fit a corresponding screw on the extremities of the umbrella ribs. To embrace the covering fabric of cotton or silk the lower portion of the cap is made large, and the fabric is secured by " pinching." To render the covering fabric thicker and stronger, and less likely to wear down the fold between the ribs, as is commonly the case, a strip of india-rubber solution or chemically prepared waterproof fabric is applied between the ribs, in a liquid state or by means of heat or by "other processes known in the trade."

[Printed, 4*d*. No Drawings.]

A.D. 1865, June 22.—N° 1673.

DE BECKER, Nicholas.—"Improvements in umbrellas and "parasols."

The first part of the improvement "consists in not making any "grooves or cuts in the sticks," "and in not driving any nails, "rivets, or screws," into the sticks, so that by leaving them intact, they will be stronger and less liable to be broken; "also "in giving the handles of the said sticks such a curve or twist, "that the umbrella when carried shut can be suspended from "the arm, which it will grasp firmly, leaving the hands of the "person carrying it perfectly free." The sticks remain quite independent of the frame of the umbrella, and can be instantly withdrawn and used as walking sticks, or "for the purpose of "self defence."

The second part of the invention consists in fitting a thin brass tube to the umbrella, on which the whole frame of the umbrella may rest. The tube may be attached to the stick either by a pin, or by a kind of bayonet fastening; when it is not desired to use the umbrella stick as a cane or walking stick, the tube is fastened by punching it to the stick.

Thirdly, the stretchers are made much shorter in proportion to the ribs than heretofore; about one-third of the length of the rib, or shorter still. The ribs are made like a T at the end where they are attached to the notch-ring, and the ring made with teeth over which the arms of the T catch. For keeping the umbrella open, "a single or double pronged spring catch, which "takes into a cup ring soldered to the tube on the stick" is used.

An ornamental shield or ring, named the "Alexandra shield," is used for keeping the umbrella closed. This shield is made with "as many vertical flutes as there are ribs," and slides over the ends of the ribs.

[Printed, 8*d*. Drawing.]

A.D. 1865, June 23.—N° 1682.

ROSENTHAL, Michael Dietrich, and GRADENWITZ, Solomon.—(*Provisional protection only.*)—"New or improved

" compositions in imitation of ivory and woods to be employed " in the manufacture of umbrella tips, umbrella and walking " stick handles, and other useful and ornamental purposes."

The composition to be manufactured into articles in imitation of ivory is formed of the following ingredients and proportions :— About 5 parts by weight of china clay; 2 parts by weight of precipitated chalk; 1 part by weight of white lead; and 2 parts by weight of gelatine. The gelatine is dissolved in boiling water and brought to the consistence of syrup, it is then mixed with the other substances, and the whole is brought to such a consistency that it can be moulded into any desired shape.

In imitating woods, common glue is substituted for the gelatine, and 4 parts by weight of " ground sawdust," of such wood as is to be imitated, is added, and a certain quantity also of colouring matter to imitate the natural woods more closely. After being manufactured the imitations are to be varnished.

[Printed, 4*d*. No Drawings.]

A.D. 1865, September 13.—N° 2348.

FOX, SAMUEL.—" Improvements in the manufacture of um- " brellas and parasols, and in apparatus employed therein."

In constructing the outer ends of trough or paragon ribs, for the outer end of each rib a short length of wire is used which is flattened out, so as to cause two projections to be formed, one on each side of a central ridge of size to fit into the interior of the end of the trough rib, and fill it up solid for a short part of its length; the outer end of the length is formed into a knob by dies or stamps, and flattened near its end that it may be perforated. The piece of wire is fixed in the end of a trough rib, and fixed by dies indenting the edges of the trough rib into the central ridge of the piece of wire, and causing the projecting webs to be bent around the trough rib, so that the central ridge of the wire is embraced by the end of the trough rib, and also the trough rib by the webs on the wire that are bent round the end of the trough rib.

This way of making the ends applies also to making of the stretcher ends. The piece of wire may be flattened to be split, and formed into an ordinary stretcher fork with two sides perforated.

Instead of making the ribs trough-like throughout, each rib is *made flat near the* end, " and then progressively bent up more

" and more till the transverse section becomes of the ordinary " trough or paragon section." Similarly the diameter of solid ribs is reduced at the end by heating and drawing. Near the joint a spring is fixed between the rib and stretcher to force out the rib, and permit the umbrella to be more readily opened.

To affix a trade mark on ribs and stretchers one rib or stretcher is at one part flattened out, and a plate attached.

To test a number of ribs at once a hollow hemispheric metal dish is used, fixed on a bench; above this is a dish of like form capable of being slidden towards the lower dish, the distance being controlled by a stop. A quantity of steel ribs are placed between the two dishes, and the moveable dish is moved toward the stationary dish by which all the ribs will be bent simultaneously, and by such means large quantities of steel ribs may be tested by bending at the same time.

[Printed, 10*d.* Drawing.]

A.D. 1865, September 19.—N° 2389.

LLOYD, Henry.—(*Provisional protection only.*)—" Improvements in sun shades or canopies for perambulators and other " wheeled carriages."

The stretchers, frames, and coverings are the same as in ordinary umbrellas, but the centre piece becomes the runner, and the notch to which the stretchers are fixed is made fast to the handle. The stem is attached to the back of the vehicle, and may be bent if needful. It is jointed, so that it can be folded back. To the end of the stem a cord or chain is fastened, " and thence carried " through the frame's centre-piece." To open the shade the string is tightened, and the centre piece of the frame passed down it and on to the top of the stem, where it is held by a catch. Or the stem may be long enough to project beyond the centre piece when the apparatus is closed.

[Printed, 4*d.* No Drawings.]

A.D. 1865, September 22.—N° 2423.

CARTWRIGHT, Matthew.—" Adaptation of elastic material " to articles requiring a bellows arrangement."

The invention, so far as it relates to umbrellas, consists in the application of an elastic ring attached to a non-elastic washer. To the edge of the ring is fastened a border of " non-elastic

" fibrous substance," to which is stretched the cover. By these means the umbrella can be opened without strain on the cover, while the elasticity of the connection allows it to yield to the wind.

[Printed, 8*d*. Drawing.]

A.D. 1865, November 8.—N° 2880.

JOHNSON, John Henry.—(*A communication from Erasmus Allington Pond, Mark Staples Richardson, and Edmund Alonzo Morse.*)—" A mode or modes of inserting glass or other trans-" parent plates in the fabric of umbrellas, or in other pliant " fabrics."

By this invention small windows of glass or other transparent material are let into umbrellas between the ribs.

To insert the glass the fabric is stretched over a plate of glass, and a grooved clasp band secured round the edges of the plate on the opposite side. The fabric is then cut away to allow the glass to appear. Or the plate may be grooved at the edge, and the fabric fastened by a wire passed round it. Glass plates with " plati-" nized surfaces " may be used, so that they are only transparent from one side.

[Printed, 8*d*. Drawing.]

A.D. 1865, December 2.—N° 3097.

COOK, Richard.—" An improved stretcher for umbrellas and " parasols."

" The improvement consists in the application of either iron or " steel, or other material, for stretchers, hardened and tempered " of requisite thickness or width, half round or flat, or other " shapes, with one hole at each end simply, and two of these are " attached to the middle bit of the rib, and consequently the " other ends are put into the runner, which forms as it were a " double stretcher." The two pieces may " be rivetted together at " the middle." When the umbrella is closed the ribs fall between the stretchers.

[Printed, 4*d*. No Drawings.]

A.D. 1865, December 22.—N° 3310.

ROSENTHAL, Michael Dietrich, and GRADENWITZ, Solomon.—(*Provisional protection only.*)—" New or improved

" compositions in imitation of ivory and wood, to be employed " in the manufacture of umbrella tips, umbrella and walking-" stick handles, and other useful and ornamental purposes."

1. For the composition to imitate ivory, take five parts by weight of China clay, two parts by weight of precipitated chalk, one part by weight of white lead, and two parts by weight of gelatine. The gelatine is dissolved in boiling water to the consistence of syrup, and then mixed with the other substances, and the whole brought to such a consistency that it may be moulded.

For the composition to imitate woods, instead of gelatine take common glue, and add to the compound about four parts by weight of "ground sawdust" of such wood as is to be imitated, and a certain quantity of colouring matter more perfectly to imitate the natural woods; after being manufactured the articles may be varnished.

[Printed, *4d.* No Drawings.]

A.D. 1865, December 23.—N° 3325. (* *)

NEWTON, WILLIAM EDWARD.—(*A communication from Henry Wurtz.*)—" Improvements in the preparation of glue or gelatine " so as to render it insoluble in water, and applicable by the " admixture of other substances to various purposes for which " common glue or gelatine cannot now be used." This invention " relates to a mode of treating or acting chemically on common " glue or gelatine, so that without being deprived of its gelati-" nizing power it will become in the process of drying converted " into a substance which is insoluble in water, so that by the " addition of various ingredients it may be converted into a sub-" stance similar to bone or ivory." This change is effected " by " heating the glue or gelatine in the form of a strong solution " in water together with a strong solution of chromic acid, or of " an alkaline bichromate (bichromate of potash, for instance)." Before the bichromate is added, " the characters of the final pro-" duct may be greatly and variously modified " by the admixture of various substances. " Weight may be given by admixing " heavy substances in powder. Hardness may be increased by " adding sand, clay, emery, pounded glass, red oxide of iron " (jeweller's 'rouge'), or tripoli; and to increase its strength " and toughness chopped fibre may be added, either vegetable, " animal, or mineral." It may be prevented when in the form of very thin sheets from becoming brittle, by rubbing it with glycerine: different colouring matters also may be added. Sometimes it is necessary to grind the materials together, the grinding surfaces being kept sufficiently heated "to prevent the gelatinization of " the liquid." When powders of a greasy or resinous nature are used, they may be "slightly moistened with diluted alcohol." Compounds may be formed "by introducing some resinous and " oily substances into intimate combinations with the modified " gelatine in the form of alcoholic solutions." The patentee details the various uses to which the new material is adaptable; " nearly every use to which the hard vulcanized rubber com- " pounds, horn, ivory, bone, shell, papier maché, have been " applied"—amongst them to the manufacture of parasol sticks.

[Printed, 6*d*. No Drawings.]

A.D. 1865, December 23.—N° 3334.

HURN, George, and HURN, Daniel.—" Improvements in " obtaining and employing continuous lengths of tanned leather " for various useful purposes."

" The continuous lengths are cut" from the hide "by causing " the knife or instrument, set to any required guage, to traverse " the entire surface of the skin, so as to divide it into an endless " piece or coil, which is subsequently submitted to longitudinal " stretching, damping, greasing, or hammering, as may be found " necessary for straightening or removing the angles." Amongst the very numerous articles to which the leather bands may be applied, "umbrellas, parasols, and sunshades" are mentioned, but the manner of application is not given.

[Printed, 8*d*. Drawings.]

1866.

A.D. 1866, January 19.—N° 179.

JACKSON, Michael.—(*Provisional protection only.*)—" Im- " provements in the manufacture of umbrellas."

Into the silk for covering umbrellas is woven "a strip of work " *about an inch wide*, and composed of wool hair," or other suit*able textile material*. These strips "are thrown in in the shape of

" weft at proper intervals," according to the required size of the gores. The strengthening material may be applied "precisely at " the wearing parts."

[Printed, 4*d*. No Drawings.]

A.D. 1866, May 2.—N° 1245.

INCE, William, and BEDWELL, William Henry.—(*Provisional protection only.*)—" An improvement in umbrellas."

By this improvement in umbrellas their head or cover is prevented from being bent backward by the action of the wind, by the employment of an extra set of stretchers, having their outer ends attached to the lower portions of the ribs immediately above their tips, and jointed below in like manner to the other stretchers, whilst the upper ends thereof are secured to a separate runner, placed above the ordinary one, so as to slide upon the handle or stick in the usual manner, and be closed and opened as usual.

[Printed, 4*d*. No Drawings.]

A.D. 1866, May 14.—N° 1370.

FYERS, Robert.—(*Provisional protection only.*)—" Improve- " ments in the construction of umbrellas and parasols."

The purpose of this invention is so to strengthen the frames of umbrellas as to prevent their being turned inside out by a sudden gust of wind. An additional runner, and an additional set of stretchers is used. The additional runner is placed on the stick between the ordinary runner and the "crown" to which the inner ends of the ribs are jointed. The inner ends of the additional stretchers are jointed by a wire to the first runner, and the stretchers are of such a length that their outer ends may be jointed to the ribs about midway between their tips and the point where the ordinary stretchers are joined thereto; by these means the frame is " doubly supported " by the ordinary stretchers, and by the additional stretcher.

[Printed, 4*d*. No Drawings.]

A.D. 1866, July 30.—N° 1961.

WHEELER, John Jackson.—(*Provisional protection only.*)— " Tipping walking sticks, and the sticks and ribs of sunshades, " parasols, and umbrellas with glass."

" Glass, either plain or coloured, is formed into tubes, which " may be silvered or gilded, and cemented to the sticks and ribs

" of sunshades, parasols, or umbrellas, also to the tops of walking " sticks, by which means a pleasing and brilliant effect is produced, " and the expense diminished."

[Printed, 4*d*. No Drawings.]

A.D. 1866, August 8.—Nº 2039.

HOLLAND, Henry.—" Improvements in the manufacture of " umbrellas and parasols."

The improved ferules are raised from sheet metal in the ordinary manner, but instead of cutting out the end, and fixing a stronger therein by soldering, the bottom is left in the raised ferule, and the " strong end " of iron, a circular disc with a tapering hole in the centre, is fixed on the end of the ferule by rivetting. A taper rivet is passed through the hole in the end of the ferule, and by pressure the ends of the rivet are expanded, and the strong end securely riveted to the ferule.

In manufacturing metal tubes for umbrella sticks soldering is dispensed with; the edges to be joined are turned up " into planes, " at right angles, to the portions of strip from which they are " formed." These turned up edges are then presented face to face and riveted; a tube is thus formed without brazing or soldering, having a straight flange running its whole length. The tubes may be hardened and tempered. A description is given of the tools used and processes followed; during the last bending process the tube is supported by a mandril in its interior.

In making the ferules, a circular blank is cut from sheet metal and pierced; this disc is raised into a cup, and the hole made taper. In the hole is fixed a brass rivet, and the " strong end " thus formed is fixed upon the ferule as above described, or the " strong " ends " may be made from iron by forging or may be cast.

[Printed, 6*d*. Drawing.]

A.D. 1866, September 7.—Nº 2299.

JOHNSON, John Henry.—(*A communication from William Henry White.*)—" Improvements in hats or coverings for the " head, parts of which improvements are applicable to parasols " and fans."

" This invention consists in forming and holding in shape, hats, " caps, parasols, and fans made of any light textile fabric, such as " silk, linen, cotton, or woollen stuff, by means of elastic hasps or " frames of metal, whalebone, rattan, or other suitable material, " over which the hat, fan, or parasol wrappers or covers are

" stretched by tightening the draw case and springs with which " they are provided."

By these means several covers may be used with one frame. In the application to parasols, the wrapper is sewn into a cylindrical shape, and provided with a draw casing and strings, by which the fabric is drawn together over the frame, and gathered to the centre. The central portion is covered by a rosette or otherwise.

[Printed, 10*d*. Drawing.]

A.D. 1866, September 15.—N° 2371. (* *)

KEYSTON, John.—(*Provisional protection only.*)—" An improved material or substance to be used instead of whalebone " in the manufacture of whips, whip handles, riding and walking " sticks, and such like articles." The surface of a hardened steel rod is dressed with a solution composed chiefly of pitch or like material; it is then coated with sheets of ebonite; the first sheet is wound round spirally; another is added, and so on until the requisite thickness is obtained; the sheets are made to adhere by a preparation of naptha. "The half-formed whip or stick" is now placed in a mould, and pressure is applied; it is afterwards wrapped up tightly in a wet cloth and put into a trough of sand and brickdust, and hardened by being submitted to a great heat (say 350°). It is then taken out of the cloth, polished, and mounted in the usual manner.

[Printed, 4*d*. No Drawings.]

A.D. 1866, September 20.—N° 2411.

SUTHERLAND, Frederick.—(*Provisional protection only.*)— " Improvements in umbrellas."

"The improvement consists in making the sticks of umbrellas " enlarged at certain parts for the purpose of presenting a more " elegant appearance when the umbrella is rolled up," and in the employment of " a sliding metal cap to embrace and hold together " the ribs by the tips thereof, when the umbrella is closed." The top end of the stick is formed with a shoulder, against which the top notch is fixed. That portion of the stick situated between the top notch and the " stop " of the runner is formed larger in diameter than the part on which the runner slides up and down, and the part forming the handle is formed "larger in diameter " than the handle part, so that when the umbrella is closed the " ribs will lie close against the stick near the top notch, and will " *not 'sag,'* or bend inwards at such part as is now the case

" with umbrellas in which the principal part of the stick is
" made of uniform size throughout."

[Printed, 4*d.* No Drawings.]

APPENDIX.

A.D. 1780, September 15.—N° 1264. (* *)

BULL, Mark.—" A machine for supporting an umbrella, which " may be fixt to any saddle or wheel'd carriage, being far more " compleat than anything hitherto invented." The invention is described in the following words:—" There is a ball and " socket of steel or iron, or any other metal or composition. The " ball moves in any direction, and is fixed by one, two, three, or " more points, which are forced against it either by a screw or " spring. The ball is made with small cavities to receive the " points which press against it. In order to secure it the more " effectually in the ball, there is a hole which receives the one end " of the staff of the umbrella, which is secured in it either by a " spring or screw, or a sliding or spring bolt. The umbrella may " be taken away from the staff, and either put under the seat of " the saddle, or fix'd before the rider. The staff may be made " whole or in two pieces, the one to slide within the other, in " order to raise or lower the umbrella, and be fix'd either by a " spring or screw. They are fix'd in the head of the saddle, and " cover'd by a top, without making the saddle appear in the least " different from what they are now made."

[Printed, 4*d.* No Drawings.]

A.D. 1856, December 1.—N° 2834. (* *)

GILKS, Charles Henry.—(*Provisional protection only.*)—
" An improved stand for umbrellas for railway and other car-
" riages."

This invention consists in the use of a stand or vessel for the reception of wet umbrellas, so constructed as readily to be " attached to a railway or other carriage door without encroach- " ing on the space allotted to passengers." To the door of the *carriage are applied* two studs or other fastenings, and the stand *is slotted so as to fit* upon these studs. The sides of the stand *are bevelled off so as* not to incommode passengers, the stand itself being made of galvanized iron or other suitable material, perforated at the bottom, and communicating with an outlet from the carriage for the drippings from the umbrellas.

[Printed, 4d. No Drawings.]

A.D. 1857, May 15.—N° 1370. (* *)

AIZLEWOOD, Joseph.—" Improvements in hat and umbrella " stands." This invention consists " in introducing into hat " stands and umbrella stands, or into articles of furniture being " a combination of the hat and umbrella stand, mirrors or glass," which form " an integrant part of the design." The accompanying drawing exhibits a highly ornamented design for a hat and umbrella stand, in which a mirror is placed in the middle of the hat stand. The patentee adds that " this combination of the hall " mirror with the hat and umbrella stand affords considerable " scope for variety of design and the application of ornament."

[Printed, 6d. Drawing.]

A.D. 1861, January 11.—N° 84.

FOOTE, Alfred Mills.—" An improved lock for receiving " and securing umbrellas, canes, and similar articles."

The device " consists of two disks or plates formed with notches " extending to their centres of a size sufficient to receive the " umbrella handle, cane, or other article; one of these disks is " permanently attached to an umbrella stand, or other support " and formed with a circular flange surrounding the other disk. " The two disks are so connected that they are held together, but " the one disk can be turned upon the other and within the " surrounding flange. Between the two disks are one or more " latches or catches, taking studs or notches in such manner that " the one disk cannot be turned upon the other until the latches " or catches are acted on by a suitable key, which I prefer to be " made flat and numbered to correspond with the lock to which " adapted. By entering the umbrella stick, cane, or other " article into the notches aforesaid when they coincide, and then " giving the disk a partial rotation, the said article is retained " within nearly a circular hole, and the catches prevent the disks " being turned until the proper key is applied; rings may be " provided above or below the said lock to receive and guide the " article if required."

[Printed, 7d. Drawing.]

A.D. 1861, July 11.—N° 1799.

REDFERN, CHARLES EDWARD.—(*Provisional protection only.*) —"Improvements in the construction of locks, and adaptation " thereof to various useful purposes."

The inventor says :—

" I form a shallow circular case of metal, say, of three inches " diameter and half an inch deep; I also form a parallel opening " about three-quarters of an inch wide, radiating horizontally " from the centre of said case; into this case I fit loosely a corresponding shaped piece of metal, in which is adapted a spring " bolt of novel and peculiar construction, in the form of a bell-crank lever, one of the arms of which is formed curved and " the other straight. The end of the bent arm has a hole formed " through same which passes over a stud formed in the second-named case, said stud being the fulcrum of the spring bolt; " there are notches made in said bolt at the angle or bend thereof, " and projecting pieces formed in the first-mentioned or outer " case for the notches in the bolt to catch against to prevent the " lock being opened by any other means than its proper key, of " which the following is the construction :—I form a flat piece " of metal about five-eighths of an inch wide and one inch long. " I also form two slits in the said flat key of different lengths " and in the direction of the length of the key. These slits pass " over two pins or studs fixed in a plate screwed to the innermost or second case of the lock, said plate being formed with " a broad notch on its edge for the insertion of the flat piece of " metal or key aforesaid. The two cases are connected together " by a flat-headed screw, the barrel of which passes through a " curved slot in the outer case, and the point of said screw fits " into a screwed hole formed in the innermost case, thus allowing this case and parts adapted thereto to turn in the outer " case."

If an umbrella stand "have one of the above locks adapted " to each of the openings destined to receive the upper part of " the stick of the umbrella, umbrellas may thus be securely " locked in the stand."

[Printed, 4*d*. No Drawings.]

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——— (*Young Men's Christian Association*).
Compstall (*Athenæum*).
Coventry (*Free Library*).
——— (*Institute*).
——— (*School of Art*).
Crediton (*Working Men's Club*).
Dartmouth (*Mutual Improvement Society*).
Deal (*Deal and Walmer Institute*).
Denton (*Denton and Haughton Mechanics' Institution*).
Derby (*Mechanics' Institution*).
Devonport (*Mechanics' Institute*).
Dewsbury (*Mechanics' Institution*).
Doncaster (*Free Library*).
——— (*Great Northern Mechanics' Institute*).
Dorchester (*County Museum and Library*).
——— (*Working Men's Institute*).
Dudley (*Mechanics' Institution*).
Dukinfield (*Mechanics' Institute*).
——— (*Village Library and Reading Room*).
Dumbarton (*Philosophical and Literary Society*).
Dumfries (*Mechanics' Institution*).
Durham (*Mechanics' Institute*).
Eagley, Bolton-le-Moors (*Library and Institute*).
Earlestown, Newton-le-Willows (*Mutual Improvement Society*).
Edinburgh (*Horological Society*).
——— (*Mechanics' Library*).
——— (*Philosophical Institution*).
——— (*Royal Society of Arts*).
——— (*Royal Scottish Society of Arts*).
——— (*Subscription Library*).
——— (*Watt Institution and School of Art*).
——— (*Working Men's Club*).
Egham (*Literary Institute*).
Egremont (*Mechanics' Institution*).
Exeter (*Devon and Exeter Institution*).
Faversham (*Institute*).
Frome (*Literary and Scientific Institution*).
Gainsborough (*Literary, Scientific, and Mechanics' Institute*).
Garforth, near Leeds (*Working Men's Club*).
Glasgow (*Athenæum*).
——— (*Central Working Men's Club and Institute*).
——— (*Institution of Engineers in Scotland*).
——— (*Mechanics' Institution, Bath Street*).
——— (*Philosophical Society*).
Grantham (*Public Literary Institution*).
Gravesend (*Gravesend and Milton Library and Reading Rooms*).
Greenwich (*Working Men's Institute*).
Guildford (*Mechanics' Institute*).
Halesworth (*Mechanics' Institute*).
Halifax (*Literary and Philosophical Society*).
——— (*Mechanics' Institute*).
——— (*Working Men's College*).
Haslingdon (*Institute*).
Hastings (*Literary and Scientific Institute*).
Hawarden (*Literary Institution*).
Hebden Bridge, near Todmorden (*Mechanics' Institution*).
Helston (*Reading Room and Library*).
Hereford (*Natural History, Philosophical, Antiquarian, and Literary Society*).
Hertford (*Literary and Scientific Institution*).
Heywood (*Mechanics' Institute*).
Holbeck (*Mechanics' Institution*).
Hollingwood (*Working Men's Club*).
Holywell Green (*Mechanics' Institution*).
Huddersfield (*Mechanics' Institution*).
Hull (*Church Institute*).
——— (*Literary, Scientific and Mechanics' Institute*).
——— (*Lyceum Library*).
——— (*Royal Institution, Albion Street*).
——— (*Young People's Institute*).
Huntingdon (*Literary and Scientific Institution*).
Kendal (*Christian and Literary Institute*).
——— (*Working Men's Institute*).
Kidderminster (*Mechanics' Institute*).
Lancaster (*Mechanics' Institute and School of Science*).
Leeds (*Church Institute*).
——— (*Library*).
——— (*Mechanics' Institution and Literary Society*).
——— (*Philosophical and Literary Society*).
——— (*Working Men's Institute*).
——— (*Young Men's Christian Association*).
Leighton Buzzard (*Working Men's Mutual Improvement Society*).
Leith (*Mechanics' Subscription Library*).
Lewes (*Mechanics' Institute*).
——— (School of Science and *Art*).
Lincoln (Mechanics' Institute).

Liverpool (*Institute*).
——— (*Mechanics' Institute*).
——— (*Medical Institution*).
——— (*Polytechnic Society*).
Llanelly (*Chamber of Commerce and Reading Room*).
London (*Athenæum Club, Pall Mall*).
——— (*Beaumont Institute, Mile End*).
——— (*Bedford Working Men's Institute, Spitalfields*).
——— (*Birkbeck Institution, Southampton Buildings, Chancery Lane*).
——— (*Bow Common Working Men's Club, Devon's Road, Bow Common*).
——— (*Christchurch Working Men's Club, New Street, Lark Hall Lane, Clapham*).
——— (*Clerkenwell Club, Lower Rosoman Street*).
——— (*Holloway Working Men's Club and Institute, Holloway Road*).
——— (*Literary and Scientific Society, Wellington Street, Islington*).
——— (*Literary and Scientific Institution, Walworth*).
——— (*St. James and Soho Working Men's Club, Rupert Street, Soho*).
——— (*St. Mary Charterhouse Working Men's Club, Golden Lane*).
——— (*South London Working Men's College, Blackfriars Road*).
——— (*Southwark Working Men's Club, Broadwall, Stamford Street*).
——— (*Spring Vale Institution, Hammersmith*).
——— (*Working Men's Club, Brixton Hill*).
——— (*Working Men's Club, St. Mark's, Victoria Docks*).
——— (*Working Men's Club and Institute, Battersea*).
——— (*Working Men's Club and Institute Union, Strand*).
——— (*Working Men's College, Great Ormond Street*).
Loughborough (*Working Men's Club and Institute*).
Madeley (*Anstice Memorial, Workmen's Club and Institute*).
Manchester (*Ancoats Branch Free Library*).
——— (*Athenæum*).
——— (*Campfield Free Lending Library*).
——— (*Chorlton and Ardwick Branch Free Library*).
——— (*Hulme Branch Free Library*).
——— (*Law Library*).
——— (*Mechanics' Institution*).
——— (*Natural History Museum, Peter Street*).
——— (*Portico Library, Moseley Street*).
——— (*Rochdale Road Branch Free Library*).
——— (*Royal Exchange Library*).
Mansfield (*Co-operative Industrial Society*).
Mansfield (*Mechanics', Artizans', and Apprentices' Library*).
Melksham (*Mutual Improvement Society*).
Merthyr-Tydfil (*South Wales Institute of Engineers*).
Middlesborough (*Mechanics' Institution*).
Modbury (*Mechanics' Institution*).
Mossley (*Mechanics' Institute*).
Newark (*Mechanics' Institute*).
Newcastle-upon-Tyne (*Mechanics' Institution*).
——— (*Working Men's Club*).
New Mills, near Stockport (*Mechanics' Institute*).
Newport, Isle of Wight (*Young Men's Society and Reading Room*).
Northampton (*Mechanics' Institute*).
Nottingham (*Free Library*).
——— (*Mechanics' Institution*).
——— (*Subscription Library, Bromley House*).
Oldham (*Analytic Literary Institution*).
——— (*Mechanics' Institution, Werneth*).
Ormskirk (*Public Library*).
Oswestry (*Institute*).
Patricroft (*Mechanics' Institution*).
Pembroke Dock (*Mechanics' Institute*).
Pendleton (*Mechanics' Institution*).
Penryn (*Working Men's Club and Reading Room*).
Perth (*Mechanics' Library, High Street*).
Peterborough (*Mechanics' Institution*).
Plymouth (*Working Men's Institute*).
Poole (*Literary and Scientific Institution*).
——— (*Mechanics' Institute*).
Portsea (*Athenæum and Mechanics' Institution*).
Preston (*Avenham Institution*).
——— (*Society of Useful Knowledge*).
Rawtenstall (*Mechanics' Institution*).
Richmond (*Working Men's College*).
Rotherham (*Rotherham and Masbro' Literary and Mechanics' Institute*).
Royston (*Institute*).
Ryde, Isle of Wight (*Philosophical and Scientific Society*).
Saffron Walden (*Literary and Scientific Institution*).
St. Just (*Institution*).
St. Leonard's (*Mechanics' Institution*).
Salford (*Working Men's Club*).
Saltaire (*Literary Institute*).
Selby (*Mechanics' Institute*).
Sheffield (*Branch Free Library*).
——— (*Literary and Philosophical Society, School of Arts*).
Skipton, Yorkshire (*Mechanics' Institute*).
Southampton (*Hartley Institution*).
——— (*Polytechnic Institution*).
Southport (*Athenæum*).

South Shields (*Working Men's Institute and Club*).
Spalding (*Mechanics' Institute*).
——— (*Christian Young Men's Association*).
Staines (*Literary and Scientific Institution*).
——— (*Mechanics' Institute and Reading Room*).
Stamford (*Institution*).
Stourbridge (*Church of England Association*).
——— (*Iron Works Reading Room and Library*).
——— (*Mechanics' Institution*).
——— *Working Men's Institute*).
Stratford (*Working Men's Hall*).
Sunderland (*Working Men's Club*).
Swansea (*Royal Institution of South Wales*).
——— (*Working Man's Institute*).
Tavistock (*Mechanics' Institute*).
——— (*Public Library*).
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Thornton Heath, Croydon (*Workmen's Club*).
Todmorden (*Mechanics' Institution*).
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——— (*Institution*).
——— (*Royal Institution of Cornwall*).
Tunbridge Wells (*Mechanics' Institution*).
Tunbridge Wells (*Society of Literature and Science*).
Turton near Bolton (*Chapel Town Institute*).
Ulverston (*Temperance Hall*).
Uttoxeter (*Mechanics' Literary Institute*).
Wakefield (*Mechanics' Institute*).
Watford (*Literary Institute*).
Wells, Somerset (*Mechanics' Institution, Grove Lane*).
——— (*Young Men's Society*).
Whaleybridge (*Mechanics' Institute*).
Whitby (*Institute*).
——— (*Museum*).
——— (*Subscription Library*).
Whitehaven (*Mechanics' Institute*).
——— (*Working Men's Reading Room*).
Whitstable (*Institute*).
Wisbeach (*Mechanics' Institute*).
Wolverhampton (*Library*).
Wolverton (*Institute*).
Woodbridge (*Literary and Mechanics' Institute*).
——— (*Working Men's Hall*).
Worcester (*Railway Literary Institute*).
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——— (*Institute of Popular Science, &c.*)
——— (*Railway Library*).

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——— (" " *Lincoln's Inn*).
——— (" " *Middle Temple*).
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——— (*Institution of Civil Engineers*).
——— (*Odontological Society*).
——— (*Royal Society*).
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B. WOODCROFT.

July 10, 1871.

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